BUILDING A FOREST FOR TOMORROW

THE FOREST POLICY

June 1985

Minister Responsible for the Forests
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Gouvernement du Québec
Ministère de l'Énergie et des Ressources

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Gouvernement
du Québec

"Building a forest for tomorrow" is more than a title, for this ambitious objective is the very cornerstone of the forest policy proposed to the citizens of Québec by their government.

"Building a forest for tomorrow" obviously requires that we bring our forests back into production and give them the capacity which is essential if Québec's forest industry is to remain competitive. But it also requires, first and foremost, that we establish the necessary conditions for maintaining and increasing the overall productivity of both public and private forests.

Québec's forests can no longer be seen merely as a source of raw material for industry. The proposed forest policy recognizes that, through its interaction with air, soil and water, Québec's forest plays a role in the ecological balance. For this reason, we must learn to manage the forest in such a way as to protect all its various functions, for it is not only a source of wood fibre, but also a wildlife habitat and recreational area.

We must all come to realize that the forest, this heritage handed down from our forefathers, cannot be seen as an unlimited reserve but, rather, as a garden in need of cultivation.

The far-reaching modifications proposed for the public forest management system will require sacrifice. This is especially true for the forest industry which, in return for a more promising future, will see some of its privileges altered.

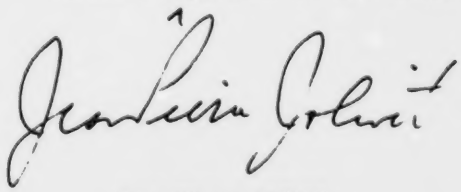
As for the private forests, the challenge is considerable. Since these forests are situated closer to industry, they must contribute more to supplying the mills.

The action program addressed to the owners of private woodlots includes numerous measures, some of a financial nature, which will encourage owners to become firmly involved in forest management.

The proposed forest policy constitutes a major challenge for Québec and the governement hopes to see all Quebecers rise to meet it.

The stakes are high. Preserving and developing the forest, putting it to use for the well-being of our society. . . This is "building a forest for tomorrow", helping Québec keep its place as one of the world's great forest lands.

Minister Responsible for the Forests,



Jean-Pierre Jolivet

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Introduction

INTRODUCTION

The forest is part of our heritage and with its vast resources and the activities it generates, it is a source of wealth for us all. As such, it must be **preserved, developed** and **utilized** for the well-being of society as a whole.

This objective lies at the very heart of this new forest policy which has been formulated after an exhaustive analysis of the problems in Québec's forest sector.

A CHANGING CONTEXT

The State owns almost 85 percent of all land in Québec. It has managed the forest in a manner consistent with the underlying context of each era.

Prior to the 1960s, it was generally assumed, both by those active in the field and by the public at large, that the forest was an inexhaustible source of wood fibre. As steward of this resource, the ministère des Terres et Forêts of the time confined its activities to supervising logging operations and protecting forests against fire. As a matter of fact, the government was content to draw significant revenues from royalties on concessions awarded to forest companies, while the latter were the only true overseers of forest development.

During the sixties, the role of the State underwent a drastic transformation, becoming an important stimulus for economic development. Development of natural resources, particularly of hydroelectric resources, and their use in expanding the economy became priorities for the government. The State assumed a more active role in the forest sector, and the powers of the ministry responsible for managing public forests were expanded.

In 1972, Québec broke new ground by adopting a forest policy which proposed a boldly innovative action plan, given the situation prevailing at the time.

Québec's forests were clearly underdeveloped at a time when the demand for forest products was proving to be particularly promising. However, the forest industry did not appear to be in a position to take advantage of this growing demand and its competitive situation gave serious cause for concern. Finally, the management system then in effect, and more particularly the nature of forest concessions, was scarcely suitable for optimal development and utilization of the forest resource.

The time had obviously come to implement new methods for managing, harvesting and developing the forest resource. The government then proceeded to revoke forest concessions and reorganized the ministère des Terres et Forêts on a regional basis. The objectives of the new forest policy were given concrete shape in the formulation of management plans for the public forest. Finally, the government encouraged owners of private woodlands to group together to develop these highly productive lands.

The existing forest system emerged from this period.

NECESSARY CHANGES

The 1972 policy statement was a worthwhile and forceful initiative. Its implementation made a substantial contribution to the development of Québec's forest industry, where output in the softwood sawing industry, for example, more than doubled in ten years, increasing from 3.1 to 7 million cubic metres.

However, measures adopted at that time no longer correspond to our changing socioeconomic realities, the precarious economic conditions of the 1980s and, particularly, the outlook for the 21st century.

The specific conditions of the forest sector have changed drastically. The surplus of wood fibre which existed in 1970 has since disappeared and, up till now, the spruce budworm epidemic has destroyed 130 million net cubic metres of wood fibre and the harvest has exceeded the real basic capacity (biophysical) as a result of inadequate forest management on both public and private lands. Moreover, pressures to use forest areas for purposes other than logging have increased. Both the the government and the public now place considerable importance on preserving the quality of the environment and maintaining the various production functions of the forest.

In response to these fundamental changes and to the need to alter the then existing forest system, the ministère de l'Énergie et des Ressources launched a series of consultations with the various groups involved in the sector, so as to bring into focus both the problems and the possibilities for future action.

Beginning in 1981, the major participants in the sector were involved not only in the formulation of a status report on research in the forest sector but also in the ensuing consultation. The objective underlying this report was to define orientations and mechanisms to be used for research and development in the forest sector. A wide-ranging round of regional consultations focusing on the future of private woodlands in Québec was undertaken in November 1983. These consultations provided the opportunity for many individuals, local organizations and businesses to express their views on assistance policies and the future of private woodlands. Finally, in June 1984, the Ministry published a consultation paper stating the overall problems of the forest sector and, at the same time, invited the various groups involved to participate actively in a review of Québec's forest policy. Their response was not long in coming, and thirty-two reports were submitted during the final consultation.

The basic point of agreement which emerged from reflection on the role and future development of Québec's forests was that our woodlands must be properly managed for the future. This require the involvement of all participants, both public and private.

THE CHALLENGE

The Ministry's study is based on the following major concerns: striking a balance between production and conservation; encouraging maximum utilization of wood fibre surpluses while building up stocks for the future; and involving the various user groups while fulfilling its own management responsibilities.

The significant changes which have swept the forest sector over the past few decades are reflected in Quebecers' decisive appropriation of their forest. Almost three quarters of wood processing is carried out by Québec firms, and it can

be said that the province truly controls the future of its forest sector.

However, this advantage must be transformed into the same kind of excellence that we were able to attain in the area of our hydroelectric resources.

The real challenge lies in providing Québec with the means to maintain its position as a world leader in forestry. This objective cannot be separated from the need to develop the forest industry and maintain its competitiveness. However, necessary though this development may be, it must not blind us to the importance of managing our forests in such a way as to meet the overall needs of our society.

PART 1

Québec's Major Orientations

1

THE ROLE OF THE FOREST IN QUÉBEC

The forest has always been a fundamental component of Quebecers' physical surroundings and of Québec's economy. It is a source of life because it contributes to the balance of nature and provides us with wood, one of the resources essential to our economy.

THE FOREST, AN INTEGRAL PART OF THE BALANCE OF NATURE

The forest (taïga and commercial forest) covers close to 80 percent of Québec's surface area.

Québec's Ecological Zones

It is therefore an integral part of the balance of nature:

- biologically, it provides a habitat for animal and vegetable species;
- physically, it acts on the soil, water and air.

The forest also plays an important role in regard to the quality of life enjoyed by Quebecers, since it provides a setting for various recreational activities.

The Forest and Wildlife

Québec boasts 487 species of vertebrates (amphibians, reptiles, birds and mammals) and each of these species has specific requirements in terms of its habitat. For many of them, the forest plays an essential role in the satisfaction of their vital needs, and this role should be protected.

The following table[1] illustrates the forest's importance as a wildlife habitat.

Wildlife	Number of vertebrate species recorded in Québec	Number of species associated with the forest
Amphibians and reptiles	35	7 (3 families)
Birds	250 (nesting) 114 (migratory)	100 (nesting) 26 (migratory)
Mammals	88	24 (10 families)
Total	487	157 (32%)

Although the forest provides a habitat for only 32 percent of the vertebrate species, it nonetheless plays a major role for most of these species by acting as a transition zone for open areas and areas bordering waterways, and by acting on the physical chemistry, wildlife productivity and hydrological processes in areas where bodies of water are found.

1. Source: « La protection des habitats fauniques au Québec ». Groupe de travail pour la protection des habitats, Sarrazin et al., April 1983.

The Forest and the Physical Environment

Conservation of resources such as water, air and soil depends to a great extent on the vegetative cover.

The forest maintains water quality by intercepting the sun's rays and reducing soil erosion. It also stabilizes stream flow. For example, studies carried out in the United States have shown that total deforestation causes a 20 percent increase in the annual flow from the watershed. In addition, evaporation from the forest helps regulate the water cycle and maintain the water balance.

The forest makes a significant contribution to air quality by intercepting large amounts of dust and particles and holding them in suspension. It recycles the carbonic gas produced by the combustion of fossil fuels (coal, oil), by absorbing the carbon and releasing oxygen during photosynthesis.

Finally, the forest plays an important role in maintaining soil quality. The structure, texture and permeability of different soils, as well as their water retention capacity, are all closely linked to the action of tree roots deep in the earth.

The Forest and the Quality of Life

Besides being an important component of our environment, the forest figures more and more prominently in Quebecers' leisure activities, thus helping to improve our quality of life.

The forest is a major attraction for informal activities such as hiking and nature study, as well as for more organized activities such as vacationing recreation in parks or canoe and camping outings.

Finally, the forest is an invaluable source of knowledge and an introduction to nature, whether through conservation areas, interpretation centres or forest education centres.

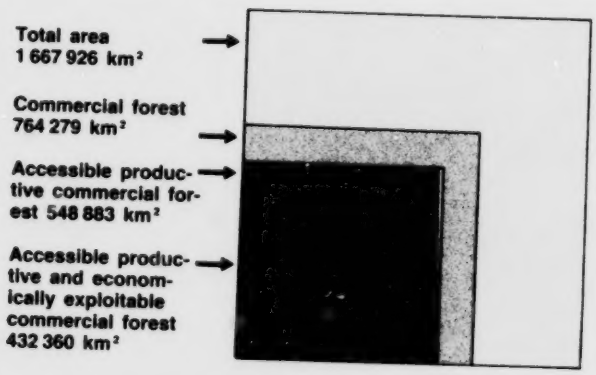
THE FOREST, A SOURCE OF ECONOMIC DEVELOPMENT

The forest's abundant resources generate a number of activities which are crucial for Québec's economy. For example, with respect to wildlife exploitation in the forest, more than 80 million dollars are spent annually in hunting, fishing and trapping activities, while observation and related activities account for further expenditures of 27 million dollars a year.[1]

However, the major source of economic activity continues to be the industrial use of wood fibre.

The Forest Resource

In Québec, the "commercial" forest covers roughly 780 000 km^2 or 47 percent of Québec's surface area. Subtracting the total area covered by fresh water or unproductive land, as well as agricultural and urban zones, we find that accessible, productive and economically exploitable forest covers 430 000 km^2, or 55 percent of the commercial forest zone, which is equivalent to 20 percent of the productive forest for Canada as a whole.

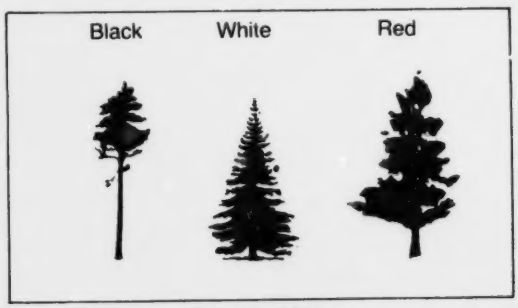

Total area
1 667 926 km²
Commercial forest
764 279 km²
Accessible productive commercial forest 548 883 km²
Accessible productive and economically exploitable commercial forest 432 360 km²

1. Source: « La protection des habitats fauniques au Québec ». Groupe de travail pour la protection des habitats, Samazin et al., April 1983.

Three quarters of this forest consists of softwood species, predominantly spruces, which are in greatest demand by the paper industry because of the quality of their fibre.

The gross merchantable volume of wood is greater than four billion cubic metres, divided as follows:

DISTRIBUTION OF SPECIES

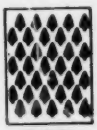


Spruce 44 %

Balsam Fir 22.5 %

Jack Pine 4.5 %

1.1 %
White Pine
Red Pine

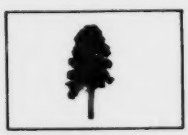


2.9 %
Other

Softwood 75 %

Hardwood 25 %

White Birch 8.1 %



Poplar 6.4 %

Maple 5.5 %

3.4 %
Yellow Birch

1.6 %
Other

Wood: Raw Material for a Major Industrial Sector

Wood is a precious and versatile material which can be used as a source of energy, as animal feed, or as the raw material for one of Québec's largest industrial sectors, the forest industry.

In 1983, compared to all manufacturing industries in Québec, the forest manufacturing sector, excluding logging operations, accounted for:

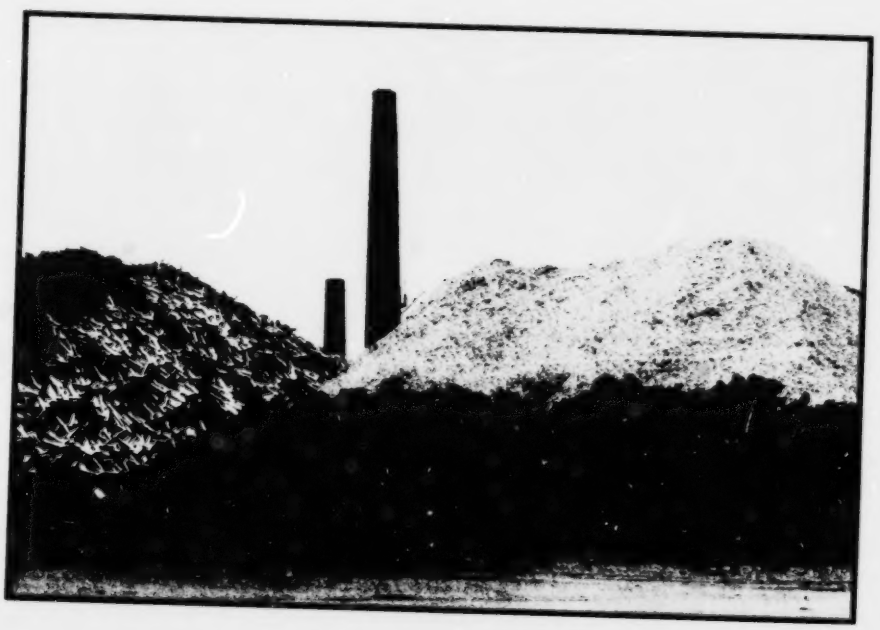
- 23% of shipments outside Québec;
- 13% of direct employment;
- 15% of wages paid;
- 14% of the value of shipments;
- 16% of value added.

For 1983, the total shipment value of all wood products obtained through primary processing came to 8.3 billion dollars and forest product exports totalled 3.4 billion dollars, figures which qualify these products as leaders in the export of manufactured goods. Since imports of finished wood products amounted to less than 500 million dollars, the net export surplus for forest products alone was almost sufficient to offset the trade deficit due to oil imports.

The forest industry is even more important for regional economies. Since there is an advantage to be gained from setting up primary processing mills close to the resource, the industry is quite frequently located in regions beyond the St. Lawrence plain, thus making a significant contribution to industrial decentralization. Forest sector manufacturing accounts for 67 percent of manufacturing employment in Abitibi-Témiscamingue, 62 percent in the Outaouais and somewhat more than 40 percent in the Côte-Nord and Saguenay -- Lac-Saint-Jean regions. The forest industry is the economic engine in a large number of single-industry communities throughout the inhabited territory.

Over one hundred municipalities in Québec depend on forest industry operations for their livelihood.

Québec's forest sector accounts for more than 88 000 direct jobs and injects almost 1.8 billion wage dollars into the economy. Upstream and downstream, it also supports considerable employment through the purchase of goods and services. The total number of jobs which depend directly or indirectly on the forest industry comes to 250 000, roughly 10 percent of Québec's labour force.



By preserving, developing and using the forest for the well-being of our society as a whole, we are in fact building a forest for the future so that Québec will remain one of the world's major forest producers.

2

QUÉBEC'S OBJECTIVES

A REVIEW OF THE SITUATION

A consultation paper already published in June 1984[1] described at length the situation which led to formulation of the forest policy objectives and associated action program. This should not prevent us, however, from reviewing the major aspects of the situation here.

Assets and Potential for Development

The existence and development of any manufacturing industry depend on the presence of markets which will absorb its products. In regard to the forest industry, the demand for products derived from wood has grown steadily, particularly for those derived from softwood species.

Annual growth in pulp and paper markets is forecast at 2.5 percent until the year 2000, with the greatest potential in commercial softwood pulp, especially the chemical-mechanical variety, as well as in writing and printing paper.

Although less significant in terms of volume than the pulp and paper markets, potential for growth does exist for certain wood product markets, especially for waferboard, but also for lumber and specialty wood, hardwood veneers and other types of boards.

The growth in world demand may have a positive impact on the forest industry. Assuming it maintains its share of markets until the year 2000, Québec's forest industry could increase its output of pulp and paper by 29 percent and of reconstituted board by 39 percent.

Such development would require that Québec maintains its competitive position and be able to capitalize on its comparative advantages. In this respect, the forest sector boasts several very positive factors.

To begin with, as we have already seen, Québec's forests are immense and production remains far below maximum capacity. Indeed, although some efforts have been made in recent years to manage the resource, it has yet to be really developed.

1. La politique forestière du Québec. Problématique d'ensemble. Ministère de l'Énergie et des Ressources, June 1984.

The second asset is that Québec's forests are composed primarily of softwoods with long, high-quality fibre. As such, they are the source of a raw material much in demand and, given the anticipated world shortage of softwoods, of great value.

Finally, supported by modernization programs, the industry began to adopt new technology as early as 1979. The pulp-making processes used in Québec plants are now as efficient as those of their immediate competitors, and there is still room for improving equipment at reasonable cost. Entrepreneurs are confident with respect to their installations and convinced of the need to continue modernizing, which increases the availability of investment funds. Although certain segments of the wood industry are denied comparable advantages with respect to market configuration and the quality of available wood fibre, positive factors are nonetheless present. Seventy-five percent of Québec's softwood lumber output is produced by modern mills and the industry's competitiveness is comparable to that of its major competitors: Ontario, the northeastern United States and the British Columbia interior.

Major Problems

In spite of a promising potential for growth and undeniable comparative advantages, the forest industry's development is compromised by a series of problems, the most important of which relates to the scarcity of wood.

Paradoxically, although Québec still has a large quantity of mature softwood available, a relative shortage of wood fibre is anticipated which, though expected to occur in the medium term, is nonetheless real. This shortage is due to many factors, such as forest structure, the geographical distribution of mature stocks, inadequate management, public forest quotas in excess of capacity and, finally, a type of management which no longer suits the changing context of the 1980s.

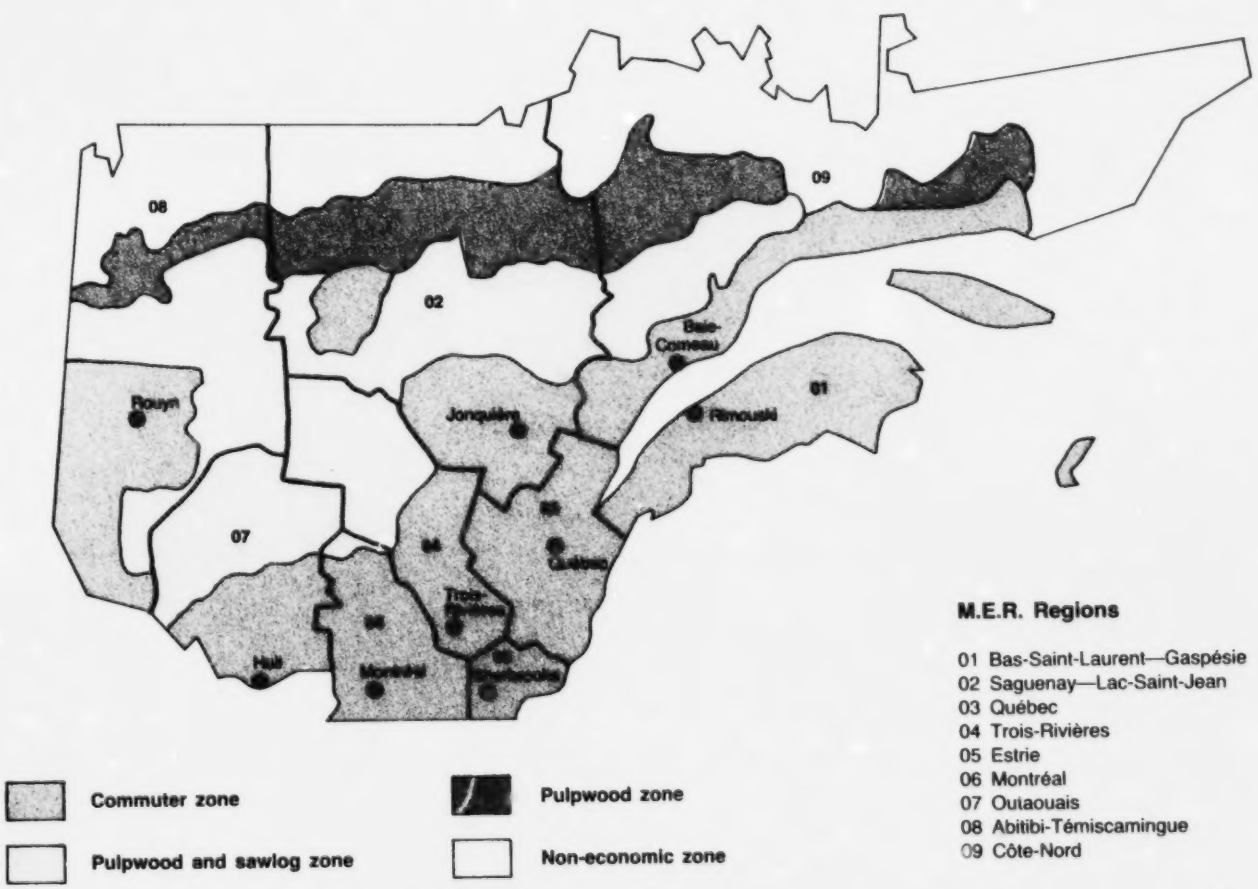
This shortage will be felt in quality species such as yellow birch, oak, walnut, white and red pine as well as softwood species such as fir, spruce and jack pine. However, the most heavily felt shortage will be in softwoods, since 90 percent of Québec's forest industry depends on softwood processing particularly of balsam fir, spruce and jack pine.

The current annual harvest of 26 million cubic metres is well in excess of the biophysical capacity, evaluated at 22 million cubic metres for all public and private lands, excluding the pulpwood zone. This is based on existing harvesting procedures and does not reflect forest management work.

Since anticipated market growth will lead to an annual harvest of 36 million cubic metres by the year 2000, the existing situation will give rise to a deficit in the medium term and, all else being equal, the situation can only worsen.

Other negative factors may restrict the development of Québec's forest industry. These include low product diversification, high production costs despite the advantage of abundant inexpensive energy, a technology lag felt especially in the wood industry, and the existence of tariff and non-tariff barriers which limit possible exports.

M.E.R. ADMINISTRATIVE REGIONS
SOCIOECONOMIC ZONES



M.E.R. Regions

01 Bas-Saint-Laurent—Gaspésie
02 Saguenay—Lac-Saint-Jean
03 Québec
04 Trois-Rivières
05 Estrie
06 Montréal
07 Outaouais
08 Abitibi-Témiscamingue
09 Côte-Nord

Balancing Production and Conservation

Apart from the problems related to the shortage of wood and to deficiencies in the processing structure, the changing needs of society require that a balance be struck between the production of wood and protection of the environment. We must learn to manage the entire forest ecosystem rather than simply the wood fibre it produces.

If the forest industry is to continue to develop as an essential component of our economy, massive investments are required which, in turn, must carry assurances as to the use and role of the lands supporting productive and accessible forests. The decrease in available area, while relatively small in proportion to Québec as a whole, together with the need to incorporate the myriad concerns of various participants whose numbers continue to grow, are causing investors to worry.

This concern, which is also shared by other forest users (hunters, fishermen, vacationers, nature lovers, etc.), can be largely attributed to the fact that the various possible uses of the forest have not been integrated into a comprehensive plan which could be easily referred to. The lack of a forest land use plan is a major obstacle for the development not only of the forest industry, but also of all natural forest resources.

BUILDING A FOREST FOR THE FUTURE

Potentially, the forest is an inexhaustible source of well-being for our society as a whole.

Today's problems stem from an excessively narrow view of forest management which focuses primarily on wood fibre production. This type of management was justified in the past, when the abundance of various available resources did not seem to require any specific measures. Be this as it may, the situation is no longer the same.

Decisive action is justified by society's changing needs, the survival and development of an industrial sector essential to our economy and the need to preserve one of Québec's greatest sources of wealth.

We must immediately set about **building a forest for the future** capable of satisfying not only the requirements of the forest industry, but all the needs of a modern and ever changing society.

This objective, which must be adopted by all who are active and take an interest in the forest, is built around three elements which form the strategic objectives of the action program:

- preserving the balance of nature;
- ensuring the development of forest lands;
- adapting processing to the resource.

Preserving the Balance of Nature

The forest must be managed in such a way that each of its components is preserved and developed, not only because the forest is an essential part of our physical environment, but also because it provides a habitat for a vast number of animal species, contributes to a better quality of life for Quebecers and supplies industry with wood fibre.

If this balance is to be maintained, the ways in which we act on the forest must be attuned to the forest's biophysical characteristics.

Ensuring the Development of Forest Lands

Although building a forest requires first that we maintain its natural balance, we must also assure the progressive management of all parcels of land capable of producing wood.

Such management must be attuned to the ecological requirements of the various sites, but must also be aimed at satisfying the needs of industry. This means that it must be directed towards the production of those species in demand by industry and upon which Québec's reputation as a forest producer has always rested.

Adapting Processing to the Resource

The means adopted to ensure that the forest industry continues as one of Québec's economic strengths involve narrowing the technology gap, diversifying production and promoting optimal processing of the available resource.

These objectives are given concrete shape in the five major themes of the action program:

- managing the forest in such a way that its various production functions are protected;
- bringing public forest land into production by implementing a new forest system;
- the development of private forests through measures involving all producers;
- measures which will allow adapting the processing structure to future needs;
- the development of research activities consistent with the policy's objectives.

PART 2

The Action Program

A forest cover is essential not only for wood fibre production, but also for other resources such as water, air, soil and wildlife. Activities undertaken in the forest must therefore be designed to maintain or restore the forest cover, as part of a comprehensive plan defining the various uses of public forests.

3

PROTECTING THE FOREST'S VARIOUS PRODUCTION FUNCTIONS

THE FUNCTIONS AND INTENDED USES OF PUBLIC LAND

Up till now, the ministère de l'Énergie et des Ressources, as the agency responsible for the management of public lands and forests, has exercised its powers and prerogatives without following any overall policy in regard to the various land requests submitted by individuals, organizations and ministries responsible for managing sectoral resources and activities. Furthermore, by issuing licences for the occupation and use of public land, the Ministry has recognized that sites given over to a particular use and protected in a specific way satisfy specific public and social needs.

The existence of differents kinds of sites is concrete evidence that forest land is currently being put to multiple uses. It must be noted, however, that this situation has led to countless enclaves which occupy a significant portion of the most productive forest land.

This is why the government has adopted a comprehensive plan to identify the uses to which the various parts of the public forest should be put. This plan will ensure a more diversified use of forest land and the continuation of its various production functions, including production of the wood fibre needed to supply the forest industry.

Two mechanisms have been chosen to attain this objective: defining the various uses to which the territory will be put, and recognizing the priority of production in certain zones.

The Public Territory Land — Use Plan

On behalf of the State, and with the cooperation of other ministries concerned, the Ministry has begun the operation of classifying public lands on the basis of their potential and use. Each territorial unit thus determined is assigned a guaranteed socioeconomic function. This process is based on a coordinated and diversified approach to the development of public land. The following table describes the territorial units produced by the public territory land-use plan as defined hereunder.

DEFINITION AND INTENDED USE OF TERRITORIAL UNITS UNDER THE PUBLIC TERRITORY LAND — USE PLAN

INTENDED USE	DESIGNATION	DEFINITION
Exclusively for conservation, protection or recreation **Forest production excluded**	Ecological Reserve	Territorial unit established under the Act respecting ecological reserves, or about to be so*.
	Provincial Park	Territorial unit, including its point of access, established under the Parks Act, or about to be so*. *Projects accepted by the C.O.M.P.A.D.R. (Comité ministériel permanent de l'aménagement et du développement régional).
Multiple use **Forest production allowed**	Conservation Zone	Territorial unit in which the terms and conditions governing forest activity are subject to the conservation requirements of the local environment: - Wildlife sanctuary: A territorial unit established under the Act respecting the conservation and development of wildlife, for which the conditions governing the use of resources and territory for purposes other than recreation are established so as to preserve the wildlife habitat. - Wildlife area: A territorial unit currently heavily used by certain species of wildlife and corresponding mainly to an essential habitat. - Recreation area: A territorial unit currently equipped with facilities or infrastructures permitting one or more intensive recreational activities. - Public utility area: A territorial unit currently employed for public utility purposes and for which user rights are recognized by the government, or which has significant value in terms of the ecology, or history, culture, tourism, education, geology or archeology. - Agricultural area: A territorial unit included in an agricultural zone as defined by the Act to Preserve Agricultural Land.
Multiple use **Priority given to forest production**	Forest and Wildlife Zone	A territorial unit whose production capacity allows the forest to grow and whose biophysical components are capable of meeting the needs of certain species of wildlife (white-tailed deer, wildfowl) in an optimum way. Numerous wildlife species are found in this zone.
	Forest and Recreation Zone	A territorial unit whose production capacity allows the forest to grow and whose biophysical components can support the introduction of facilities for several types of intensive recreational activities.
	Forest Production Zone	A territorial unit in which primary emphasis is placed on wood fibre production while taking into account production of other natural resources, and whose biophysical components are maintained through forestry techniques.

Three categories of forest lands are determined under the public territory land-use plan. The first, **from which forest production is excluded,** includes provincial parks, ecological reserves, and proposed parks or reserves which have been approved by the government.

The second category, known as the "conservation zone", includes five types of sites characterized by one or more specific uses and in which **forest production is allowed.** Included are wildlife sanctuaries and wildlife areas (territorial units containing habitats essential to wildlife), recreational areas and public utility areas which mark the presence of facilities and infrastructures heavily used by the public or which merit specific protective measures (fresh water sources, for example), and, finally, agricultural areas where public land is zoned for agricultural use.

The third category of forest lands comprises territorial units **in which forest production is given primary emphasis.** This category includes the "forest production zone" in the strict sense, the "forest and wildlife zone" and the "forest and recreation zone". In addition to being geared to forest production, the latter two feature biophysical components which are particularly important for wildlife or for recreational activities.

The M.E.R. is proceeding with the public territory land-use plan, in cooperation with the sectoral ministries concerned with the management of natural resources and activities carried out on public lands, and with ministries responsible for preserving our heritage. The public territory land-use plan stems from the government's position with respect to the orientation and utilization of public lands. The government thus intends to forward the public land use plan to each regional county municipality, preferably before the M.R.C. submits its preliminary development plan within the frame work of Section 16 of the Act respecting land use planning and development. The M.R.C., the regional county municipality and the ministries involved will discuss this plan in order to make any necessary adjustments to adapt it to local conditions and to the specific needs of the local population. Following this period of discussion, the regional county municipalities will have to incorporate the public territory land-use plan into their own development plans. Thanks to the land use plan, all those engaged in activities in the field will, for the first time, have an overall view of current and future public land use.

The land-use plan thus acquires legal status through the Act respecting land use planning and development, which unites all the parties involved, government as well as private.

In view of the changing needs of society as a whole, the public territory land-use plan obviously cannot remain static. The procedure for amending it will thus be included in the Act respecting land use planning and development.

The Forest Production Territory

Although the public territory land-use plan allows the different intended uses of the territory to be determined and, to a certain extent, protected, it does not guarantee how long they will last. Industrial development, however, requires a certain minimum assurance as to the length of time the territorial units concerned will be designated for use in forest production.

In view of the importance of the forest sector in Québec's economy, and of the need to maintain the forest industry's competitiveness and encourage its development, the State must assign a particular territorial status to the lands allocated for wood fibre production.

Public Forest Lands

Establishment of the plan must therefore be completed by recognizing the specific intended use of each of these forest zones. This means that forest production, including forest development and wood harvesting, must be given **top priority** in the "forest production", "forest and wildlife" and "forest and recreation" zones. This recognition must be written into the development plans prepared by the regional county municipalities.

Bringing forest land into production is essential if we are to ensure the development of the forest sector, on the one hand, and protect the forest's various production functions, on the other. This recognition is based on the

exclusive responsibility borne by the government and its ministries with respect to the management of resources on public land. However, this principle implies that the government and the regional county municipalities share responsibility for development of public land.

Private Forest Lands

Assurance as to the intended use for forest production is not a problem as far as private forest lands are concerned.

The vast majority of private forests (93 percent) are productive. Their wood production function is not in danger, but is not necessarily protected by agricultural zoning either, despite the fact that the latter applies to a very large portion of hardwood and mixed forests because of the presence of maple bushes. The agricultural zoning legislation, which also allows forest production on abandoned or uncultivated agricultural land, does not necessarily guarantee that these lands will be used according to their potential for forest production. However, the problem with respect to privately held forest land is the lack of knowledge of how much area owners will actually devote to wood fibre production.

In this respect, the procedure adopted by the government includes granting the status of forest producer, which is similar to that of agricultural producer, to active forest property owners. This is in no way an attempt to zone private forest lands, but is rather an incentive measure which will help identify and promote the development of private forest lands devoted to wood fibre production.

As will be seen in the chapter dealing with the action plan for privately held forests, it is essentially an incentive measure which property owners are perfectly free to accept.

BALANCED FOREST UTILIZATION

The forest is an essentially dynamic environment whose components are interdependent. For this reason, harvesting any one of these components must be carried out in such a way that the ecological balance is maintained as much as possible. Wood harvesting has not always taken the various production functions of the forest into account.

Two measures have been adopted in this respect. The first consists in investigating the biophysical characteristics of production areas and the second involves formulating harvesting methods adapted to these characteristics.

Knowledge of the Forest

Defining an ecological frame of reference for the forest production territory requires research into the following elements:

- the time sequences of plant reactions to surrounding factors or various human activities;
- classification and cartography of forest areas (public and private) so as to assess their potential, including their potential for forest production, as well as any restrictions which could cause deterioration in the environment.

The Ministry will carry out this work in cooperation with the ministère de l'Environnement, and a team specialized in forest ecology will be created for the purpose.

Furthermore, the Ministry will continue to study the progress and impact of phenomena such as spruce budworm epidemics and the impact of forest management activities, especially that of artificial regeneration.

Guidelines for Forest Activities

Under the public territory land-use plan particular areas with specific intended uses, such as essential wildlife habitats and ecological reserves will be determined. For each of these areas, a set of forest activity guidelines will identify procedures for harvesting resources which will ensure protection of the area's intended use for production. The guidelines will stipulate which types of cutting must be applied, depending on each area's characteristics. The ministère de l'Environnement, the ministère du Loisir, de la Chasse et de la Pêche and the ministère de l'Énergie et des Ressources have already reached an agreement on these guidelines.

Conservation Zone

This zone comprises the areas whose biophysical components are the most fragile. Forest production is still allowed in this zone, but is not the most important activity and must be carried out in such a way as to respect the intended use of each site.

Within the "conservation zone" therefore, harvesting and forest management for purposes of wood fibre production will be secondary to the area's major intended use. They will have to be carried out in conformity with directions formulated in cooperation with the manager of the resource in question and will have to respect the heterogeneous nature of the forest. For example, in the question of essential wildlife habitats, the M.E.R. has formulated specific management directions based on principles put forward by the Groupe de travail pour la protection des habitats (G.T.P.H.) in cooperation with the ministère du Loisir, de la Chasse et de la Pêche.

Eventually, these directions will be incorporated into the Lands and Forests regulations, thereby becoming mandatory for all forest users, and will be included on the cutting licence issued to each user.

Forest Production Territory

Wood fibre production is the primary activity within the three zones making up the forest production territory. The activities provided for in these zones must therefore allow for their development for this purpose. However, these zones have also revealed other potentials (with respect to wildlife or recreation) which must be preserved either because of their utility (e.g., sports hunting, controlled development zones, wildlife reserves), or for potential future development. In each case, it is essential to preserve the forest cover.

Every action carried out within this territory will have to allow for the preservation or restoration of a good quality forest cover. Harvesting procedures will therefore incorporate silvicultural practices allowing for further eventual production in the territory after cutting. They are aimed at protecting existing regeneration, reducing the usual length of time required for regeneration, and encouraging the natural regeneration of preferred species.

These procedures will be included as directions on the cutting licence issued to each user. They thus involve significant modifications to operating methods, and will allow development of other resources by protecting vital biophysical components.

PROTECTING THE FOREST

Public forests must be protected against hazards such as fire, insects and disease as Québec cannot afford to lose stocks of wood needed for its industrial development. In addition, the significant investments which will be made to improve the resource require an adequate level of protection to ensure their profitability both in the public and private forests.

One of the problems in forest protection has to do with using methods for fighting insect epidemics and disease which are most likely to protect existing stocks. Few silvicultural methods now exist for fighting insect epidemics and disease, so that research efforts will have to be increased if the use of pesticides is to be controlled over the medium and long terms. The only effective tools available at the present time are biological or chemical insecticides. For the time being, there is no overall policy for the use of pesticides, so that the Ministry cannot plan its program on a long-term basis around points of reference known and accepted by all the various participants. Moreover, government administration does not always make carrying out emergency operations easy.

A second major problem within this same context is to ensure successful forest regeneration by eliminating competing vegetation. In many cases, there are no effective and inexpensive alternatives to the use of phytocides, though site preparation methods and planting techniques help mitigate competition problems.

Prevention and the Fight Against Insect Epidemics and Disease

The approach that has been adopted consists in using the least costly methods available to minimize losses caused by insects and disease while avoiding any major impact on the environment.

It is based on operation methods which rely on inventory and control. Techniques for detecting defoliating insects are considered effective. However, the same cannot be said for the detection of insects which attack wood or of tree diseases; these methods will have to be improved. Control can be exercised through the use of silvicultural, biological or chemical methods for dealing with defoliating insects (with biological methods being given preference), while sanitation is the chief method employed to prevent spreading in the other cases.

At the organizational level, the Ministry intends to consider the fight against insect epidemics and disease as much an emergency as the fight against forest fires. Thus, the operational aspects of the campaign will be handed over to the organizations (Sociétés de Conservation) already responsible for protection against forest fire. The Ministry will continue to exercise its responsibilities in the areas of scientific expertise, planning, priority setting, detection, and quality control of operations.

Eliminating Competing Vegetation

Usually, the most productive soil is plagued by the most severe problems of competing vegetation which means that, if the significant sums invested in reforestation are to be protected as they should, maintenance is essential, as it ensures an acceptable survival rate and worthwhile growth among saplings.

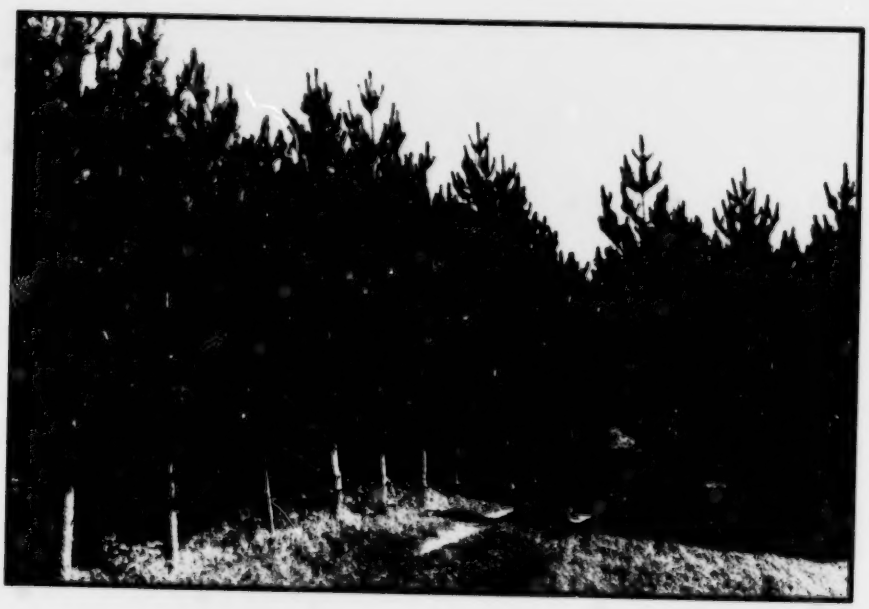
Various measures are possible and preference will be given to methods requiring minimum use of chemicals for maintenance (site preparation, planting selected strains, mechanical maintenance, etc.). Nonetheless, phytocides will still be necessary and, for a portion of the regenerated areas, will be used once or twice over a 50-year cycle.

The Use of Pesticides

Chemical and biological pesticides continue to be essential tools for forest management, both in controlling insects and disease and in maintaining regeneration.

They can, however, affect the environment so that to keep the level of risk to a minimum, biological pesticides will be given preference whenever they are available.

Furthermore, the use of pesticides in the forest will be governed by a policy which will be formulated by the ministère de l'Environnement and the ministère de l'Énergie et des Ressources. This policy will include a catalogue of products authorized for use in Québec, the conditions governing their use, and information on appropriate environmental follow-up.



Since the State owns close to 90 percent of the territory, the public forest is a very important element in Québec. How the forest is managed is therefore crucial for the future of the forest sector and is the core of the action program.

4

MANAGEMENT OF THE PUBLIC FOREST

THE PROBLEMS

Insufficient Production

The existing system of managing public forests is the culmination of management practices which were developed during a period of abundant wood fibre supplies. In 1969, only 53 percent of the softwood capacity and 41 percent of the hardwood were used. Hardwood underutilization persists today, since the annual supply is 7 million cubic meters compared to an annual demand of less than 3 million cubic meters.

However, the continued availability of more popular species such as yellow birch and red and white pine is threatened by current utilization levels (peeling and sawing), while the volume of pulpwood continues to be under-utilized, regardless of the species.

The following table illustrates the gap between the annual allowable volumes for all types of processing (peeling, sawing, pulpwood) and the average cut for hardwoods and for softwoods other than balsam fir, spruce and jack pine. These figures should be interpreted in the light of current practices so that, while 48 percent of the yellow birch annual allowable volume is of sawing and peeling quality, more than 95 percent of the average cut is composed of wood for sawing and peeling, and affects only concentrations of this species.

Average Annual Volume Allowable and Cut
by Species (except balsam fir,
spruce and jack pine)
in 1 000 m^3

Region	White and red pine		Other softwood		Yellow birch		Maple		Poplar and other hardwood		White birch	
	All.	Av.	All.	Av.	All.	Av.	All.	Av.	All.	Av.	All.	Av.
01	4	2	105	57	40	17	52	22	126	161	93	25
02	1	1	16	3	26	5	9	0	521	87	885	74
03	3	3	16	12	51	34	33	12	35	42	141	10
04	21	42	37	6	112	42	65	12	265	140	325	38
05	1	1	2	1	6	2	10	4	10	16	2	1
06	9	10	32	8	94	35	99	31	80	114	73	14
07	250	151	236	49	478	108	458	109	444	229	444	13
08	218	180	278	18	225	29	159	9	776	287	679	72
09	2	0	13	0	3	0	1	0	174	19	437	4
Total	509	389	735	154	1 035	272	886	199	2 431	1 095	3 079	251

All.: Allowable cut Av.: Average cut

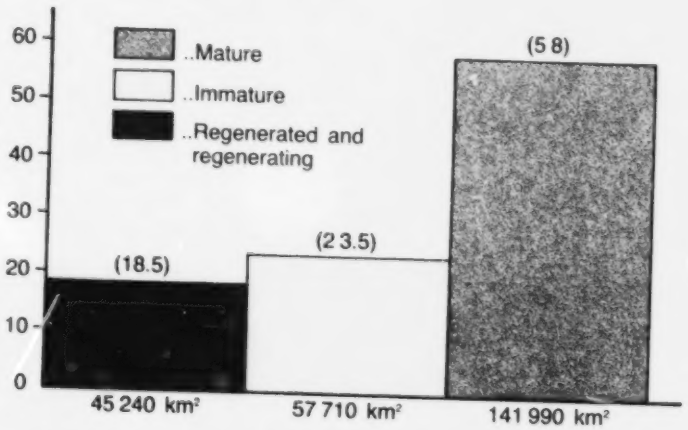
The supply and demand for balsam fir, spruce and jack pine, which satisfy 90 percent of Québec industry's wood fibre requirements, is in a deficit position considering the annual capacity and the current allowance level. The magnitude of the problem is illustrated by the following table:

Despite the existence of mature stocks capable of satisfying the industry's needs for periods ranging from 10 to 50 years depending on the management unit (See following figure), Québec can no longer rely on sufficient resources for its medium and long-term economic development.

Annual Harvest Capacity and Current Allowance for Balsam Fir, Spruce and Jack Pine ('000 m^3)

Region	Annual harvest capacity ('000 m^3)[1]		Current allowance ('000 m^3)
	including pulpwood zone	excluding pulpwood zone	
01	1 795	1 795	3 240
02	6 445	5 050	9 840
03	615	615	1 120
04	1 765	1 765	2 680
05	15	15	35
06	290	290	580
07	1 160	1 160	1 635
08	4 150	3 765	7 200
09	4 955	3 535	5 360
Total	21 190	17 990	31 690

AREA BY STAGE OF DEVELOPMENT FOR BALSAM FIR, SPRUCE AND JACK PINE IN PUBLIC FORESTS (%)



Accessible productive forest area used to calculate the annual harvest capacity

1. Biophysical capacity taking into account the impact of current harvesting techniques without management activities.

An Inadequate Management System

The management system includes all the rules and mechanisms which allow or govern optimal production in the territory, as well as forest quotas, accessibility to the resource and the fees charged on harvested wood.

In view of the current situation, it must be concluded that the existing management system no longer satisfies today's needs, and that a major revision is necessary.

Unsound Management Rules

The calculation of the annual harvest capacity on a sustained yield basis is widely acknowledged throughout the world as a basic principle for determining the supply of wood fibre. In Québec, in view of the requirements for economic development, industrial demand and the overabundance of mature stocks, a management system has developed which promotes maximum utilization of these stocks but ensures a sustained yield only under very precise conditions. These conditions, which are found in the management plans prepared for each management unit, call for harvesting all the mature stock in the territory and undertaking appropriate silvicultural measures. By adhering to the management plan, it is theoretically possible to avoid supply shortages in any given management unit. (For example, this required harvesting the 240 million cubic metres of softwood in the pulpwood zone.)

In actual fact, users do not harvest all the mature stands in a territory and are extremely reluctant to harvest the mature stocks in the pulpwood zone. In addition, the spruce budworm epidemic has appreciably reduced mature stocks in the southern zone, while cutover land has not always been restored. The silvicultural measures needed in these cases require advanced techniques (using fast-growth species, short turnovers, fertilization, etc.) which must still be developed.

It is time to change these management rules, which vary from one unit to another and which, given existing practices, cannot ensure the long-term continuation of economic activity.

Harvesting and Management: Two Separate Activities

Anxious to assume its management role in a context of expanding public administration, the Ministry excluded forest users from any management activity other than harvesting and protection against fire. It thus contributed to the separation of harvesting from other phases of management, and to a drop in user participation in these other activities. Today, this dichotomy in the process of bringing forest territory into production remains a problem which is aggravated by the relative scarcity of wood.

Since operators were not involved in bringing given territories into production, their concerns are limited to the short-term and, since regeneration was not one of their objectives, they used harvesting methods which caused loss of wood fibre and productive land, under-utilization of the productive potential of forest areas and a reduction in the quality of residual stocks.

Excessive Allowances

Given the relative scarcity of wood, it is important to maximize our use of all supply sources; in other words, of all the roundwood, chips, sawdust and shavings produced in public and private forests. The assured supplies currently granted for the public forest are well in excess of the actual volumes which should be derived from this source, a situation which does nothing to encourage the optimum utilization of the other available sources of supply. A false impression is thus conveyed as to the allowable volumes in the public forest, and this in turn contributes to limiting the development and establishment of new industry.

For Québec's public forests as a whole, the average harvest of balsam fir, spruce and jack pine over the past five years amounted to 20.8 million cubic metres while assured supplies came to 31.7 million cubic metres. For the past five years, therefore, the average

harvest accounted for only 66 percent of allowances. For hardwoods, the average harvest over the past five years totalled 1.9 million cubic metres, or 65 percent of the overall quota of 2.9 million cubic metres.

Finally, in view of the fact that the pulpwood zone is not yet accessible, the balsam fir, spruce and jack pine capacity of the territories providing the current harvest is only 18 million cubic metres, which means that the overall quota corresponds neither to the average harvest of the past five years, nor to the production capacity of these territories as calculated according to existing rules. The situation is illustrated in the following table:

Balsam Fir, Spruce and Jack Pine
('000 m^3/year)

Region	Capacity[1]	Quota	Average harvest[2]
01	1 795	3 240	2 220
02	5 050	9 840	6 590
03	615	1 120	880
04	1 765	2 680	1 740
05	15	35	30
06	290	580	570
07	1 160	1 635	990
08	3 765	7 200	5 750
09	3 535	5 360	1 980
Total	17 990	31 690	20 750

An Obsolete Mechanism

At the present time, wood quotas are granted essentially through supply contracts and forest concessions. Although the 1972 forest policy provided for the disappearance of forest concessions, these are still widespread. This quota system still suffers from drawbacks in that it does not encourage the use of forest management techniques to improve the productivity of stands, or provide for full use of all the available resource, since the concession holder is generally interested in only one or two specific products while holding property rights over all the wood in his concession.

With the supply contract system, the only concern is to allot a certain volume of wood, so that this method does not encourage users to develop a sense of commitment to the forest or concern for its development. On the other hand, the supply contract does allow for quotas covering all available wood in a territory.

Each of these systems is in use over a portion of the territory. Concession inspires a sense of commitment to a territory but does not allow for optimum use of all the wood available; the supply contract enables users to integrate their activities to a certain extent, but fails to generate sufficient interest in forest management.

An Unsuitable Fee Structure

The existing royalty system for the public forest includes more than sixty fees established over the years on the basis of species, the use of the wood, measuring methods and the system of tenure. Although the system allows for certain regional disparities insofar as the domanial forests are concerned, it is ineffective as a management tool today, being unadapted to more dynamic forest management.

The current fee structure, then, encourages over-utilization of the public forest to the detriment of other sources of supply and fails completely to encourage optimum utilization of available commercial wood.

1. Biophysical capacity, excluding the pulpwood zone and taking current harvesting methods into account.
2. Last five years (1979-1980 to 1983-1984).

THE DEVELOPMENT OF FOREST TERRITORY

The thrust of the Ministry's action program for public forests consists in bringing forest territory into production, an objective which entails an overhaul of the basic principles of forest management.

The Basic Principle: Respecting the Sustained Yield Capacity

In order to ensure the long-term continuation of the forest resource and the economic activity it generates, public forests will henceforth be managed on a sustained yield capacity basis. Under this principle, the wood fibre quotas granted in the public forest must respect this capacity, and any action undertaken with respect to managing, protecting or using the forest must be designed to maintain and even increase this yield.

However, this principle will not apply to certain quality hardwood species, for which it is too late to stave off the reduction of supply because of the current rate of utilization, aimed solely at concentrations of these species. Reduction can be arrested only to the extent that new utilizations permit harvesting all allowable volume in all stands. Every ten years, the Ministry will indicate the allowable cuts for these species and as of now, will begin applying silvicultural measures for the development of quality hardwoods as well as white and red pine. Such measures are even more necessary because these very valuable species are the most appropriate crops for certain territories. Integrated cutting is the first essential step towards adequately developing the hardwood forest. In addition, development requires that activities be adapted in order to ensure optimal production on the basis of the biophysical characteristics of the sites concerned. As for the lower-quality hardwoods, restrictive management rules are unnecessary, in view of the current and anticipated under-utilization of these species.

These principles embody various concepts and entail calculation rules which should be defined in such a way that all participants will interpret them in the same way.

Definition of Sustained Yield

The annual sustained yield harvest capacity equals the maximum volume of wood fibre which can be harvested in perpetuity from a management unit without reducing the forest's production capacity or causing supply shortages.

This definition implies that the allowable harvest level will vary according to the type of management that is actually undertaken. Calculation of this harvest level is based on assumptions related both to harvest and protection procedures, and to methods used to increase the average yield of the stands.

Definition of Basic Management

Basic management consists of two elements:

- bringing back into production, by reforestation or other silvicultural treatment, areas where regeneration did not exist before 1986 or was unsatisfactory (backlog);

- restoring cutover land to production by:

a) adapting harvesting methods to the characteristics of the sites so as to achieve a level of production at least equal to that of the stands which existed prior to harvesting;

b) reforestation in areas where adaptation of harvesting methods is not sufficient to achieve satisfactory natural regeneration in relation to desired production objectives.

The aim is thus to regenerate all cutover areas with desirable species by seeing that their environmental requirements correspond to the sites in question and by minimizing the interval before regeneration. Basic management should also be such that, according to the forest's biophysical characteristics, its overall productivity is maintained for all resources.

For the past five years, an average of 200 000 hectares per year has been harvested in the public forests and this is expected to increase to 225 000 hectares over the next five years. Natural regeneration, particularly through the adaptation of harvesting methods, must be given priority in future cutover areas. However, regeneration studies undertaken during the past ten years indicate that the minimum area that must be reforested amounts to roughly 75 000 hectares per year. Beginning in 1988, when 200 000 000 seedlings will have been produced for the public forest, the total reforestation area will equal 90 000 hectares, including 15 000 hectares in the backlog areas. Thus, beginning in 1988, reforestation will cover an area equal to 40 percent of the area harvested each year, but should decrease with eventual changes in harvesting methods.

Rules for Calculating the Annual Harvest Capacity

The sustained yield capacity will be calculated for each territory under a quota on the basis of various assumptions related to harvesting methods and to the anticipated results of basic management. These assumptions are detailed in the following table.

This calculation will affect only softwood stands and those in which softwoods predominate. For the latter, the allowable cut for other species will be assessed in relation to the anticipated growth in the allowable harvest of species subject to sustained yield management.

Rules for Calculating the Annual Harvest Capacity

Assumptions With Respect to Harvesting Procedures

Management unit	All calculations of the harvest capacity will be based on the user's assigned territory.
Slopes	Volumes located on slopes in excess of 50 percent are excluded; partial exclusion for slopes 30 to 50 percent, according to the territory.
Greenbelts	Exclusion of part of the volumes included in the protective belts required for bodies of water and water courses, according to the harvesting procedures which will be proposed in the guidelines for forest activities.
Minimum volume per stand	49 m^3/ha for balsam fir, spruce and jack pine 35 m^3/ha for white pine and red pine
Minimum diameter	10 cm (D.B.H.) for balsam fir, spruce and jack pine 30 cm (D.B.H.) for white pine, red pine and yellow birch 10 cm (D.B.H.) for other hardwoods
Rot	Degree of rot evaluated by species and by region or zone; maximum of 3 percent for spruce and 5 percent for other species
Waste	5 percent waste allowed for stems and parts of stems left on cutover land.
Diseases and insects	Anticipated losses attributable to the current spruce budworm epidemic are subtracted.
Maturity	Stands are harvested when they have reached biophysical maturity; a ten-year prematurity is acceptable in certain territories.

Assumptions With Respect to Basic Management

Interval prior to regeneration	Maximum interval of 5 years for all stands under consideration.
Yield in desired species	Constant for the entire time horizon and at least equal to the yield of the original stands for all areas. Superior to yield of original stands for areas lacking regeneration or where regeneration was poorly executed prior to harvesting and reforestation.

The annual harvest for hardwood stands and mixed stands which are predominantly hardwood will be based on the allowable cut.

This management rule will have a major impact on operating methods in the public forest. In fact, the allowable harvest volume thus determined will be available only if all the assumptions are taken into account both during the harvest and when basic management measures are undertaken. Every user with an assured supply in the public forest will thus have to adopt harvesting and management methods which comply with the assumptions for calculating the annual harvest capacity. Any method which results in a failure to achieve the assumptions will lead to a reduction in capacity and thus in wood fibre quotas.

It is anticipated that these new forestry practices will generate a gain of more than 8 million cubic metres in the allowable harvest volumes, as follows:

Balsam Fir, Spruce, Jack Pine
('000 m^3/year)

Region	Capacity[1]		Capacity with basic management		Gain expressed as allowable harvest volume	
	Excluding pulpwood zone A	Including pulpwood zone B	Excluding pulpwood zone C	Including pulpwood zone D	Excluding pulpwood zone (C-A)	Including pulpwood zone (D-B)
01	1 795	1 795	2 580	2 580	785	785
02	5 050	6 445	7 160	9 130	2 110	2 685
03	615	615	855	855	240	240
04	1 765	1 765	3 030	3 030	1 265	1 265
05	15	15	30	30	15	15
06	290	290	485	485	195	195
07	1 160	1 160	1 720	1 720	560	560
08	3 765	4 150	5 830	6 240	2 065	2 090
09	3 535	4 955	4 340	5 800	805	845
Total	17 990	21 190	26 030	29 870	8 040	8 680

1. Biophysical capacity of all productive and accessible forest lands.

Access to Production Sites

The extent to which public forests can be harvested and developed depends on how accessible they are to the users. The following figure shows the existing forest road transportation network. In the short and medium terms, the supply problems facing the industry, though less pressing, are brought about principally by distance and poor access to exploitable stands which are located mainly in the pulpwood zone.

Strategically, access to the northern regions is thus imperative for the industry's survival and development.

This forest area contains a large portion of Québec's mature stands and efforts must be concentrated there to recover the wood fibre during the coming decades, while bearing in mind the system established by the the James Bay Agreement.

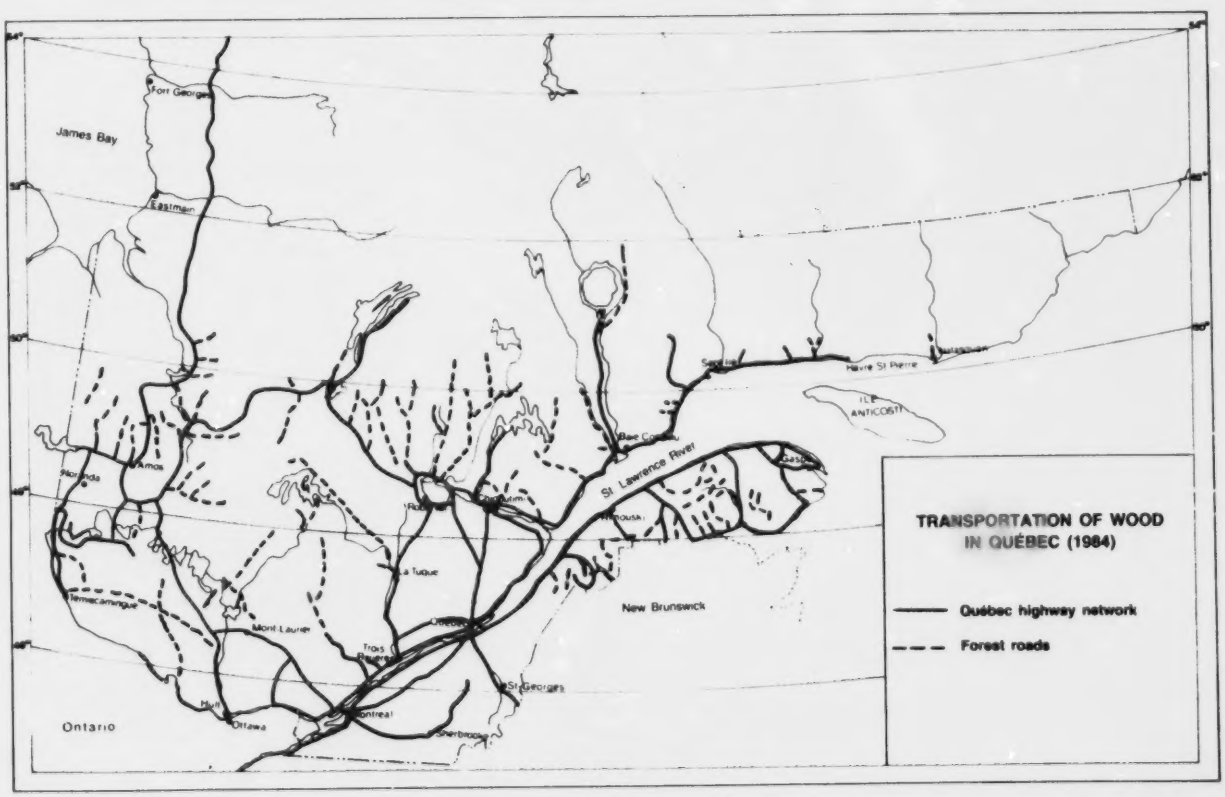
The highway program should be seen as one means available to the Ministry to ensure industrial development. In this sense, its various parameters must be adapted to each project and be incorporated into a particular assistance program. At the operational level, a refund is provided of 50 percent of the costs approved by the Ministry for the construction of access roads included in the provincial highway network.

Three complementary programs are attached to this basic program:

- an additional subsidy of up to 50 percent for forest roads built in the pulpwood zone;
- an additional percentage of up to 40 percent for bridges costing 100 000 dollars or more;
- a 50 percent participation in the upkeep of bridges within the network with a deductible of 1 000 dollars.

Industries using them will be responsible for the upkeep of access roads.

ROAD NETWORK



A NEW FOREST SYSTEM

The new forest system is essentially designed to involve the user in the management of the forest while guaranteeing him a long-term supply. It must provide for bringing land back into production under the rules defined above. Although quotas constitute the most important element, the system is based on the principles and rules of management, since these allow the definition of conditions under which users granted public forest quotas will exercise their rights and fulfil their obligations.

This forest system entails major changes in the management of the resource. It also necessitates a new legal system which will replace all existing guarantees, be they assured supply or concession, by a new type of contract. In effect, the Ministry intends to abolish assured supplies without financial compensation. In return, it intends to sign a **forest management contract** with each user involved, which should guarantee a long-term supply according to the terms and conditions described below. To avoid any adverse effect on users, given existing law, the new legal system will enable them to use their forest management contracts as collateral when their companies seek financing from lending institutions.

This operation will be completed no later than September 1, 1986.

Readjusting Quotas

In regard to the quota of wood taken from public forests, the Ministry intends to maintain supplies to existing holders of stumpage rights, subject to a reassessment of their real needs, an equitable distribution of the resource and complementarity between the various sources of supply. This means that, despite the extent of the volumes involved, the public forest will be considered a residual source of supply. In terms of the quota priority will be given to wood that has already undergone an initial phase of processing (chips, sawdust and shavings) and to wood from private forests marketed by syndicates and marketing boards or originating from private forests owned by the firm involved.

This constitutes a significant change, and the Ministry is counting on a contraction in quotas of roundwood from public forests to improve the marketing of wood fibre taken from alternative sources and so encourage suppliers and users to sign long-term agreements.

The second and equally important element of change concerns the quota amount. Contrary to the existing situation, the volume of wood guaranteed to users will not be set on the basis of a theoretical production capacity, but rather on the basis of the current real need of the production unit concerned. Every user who already holds an assured supply in the public forest will be allowed a quota, but not necessarily for an equivalent amount, since this quota must correspond to his real needs and will be determined on the sustained yield basis for a given territory. Moreover, while taking the current situation into consideration, the quota system should be as fair as possible in awarding supply territories.

The quota per mill will be set according to the average harvest of softwoods and hardwoods over the last five years. This amount will be adjusted to reflect:

- optimum use of supply sources (chips and wood from private forests);
- increased harvest due to the recovery of wood affected by the spruce budworm;
- industrial projects planned for and approved by the Ministry;
- reductions in production brought about by external causes (strikes).

Thus, for Québec as a whole, the overall softwood quota should be roughly 21 million cubic metres, a reduction of 10 million cubic metres compared to the existing assured supplies granted in the public forests. The overall hardwood quota will be reduced from 3 to 2 million cubic metres and that of white and red pine, from 0.5 to 0.4 million cubic metres.

With respect to the needs of new users, especially where the introduction of new industrial components is involved, the Ministry will contemplate quotas of wood from public forests only in regions where a measure of leeway still exists. In addition, the quota will be conditional on the maximum utilization of other supply sources (chips and roundwood from private forests) which must be covered by long-termn agreements between the user concerned and the producers.

The Forest Management Contract: Rights and Obligations

The allowance of a volume of wood fibre in the public forest will be formalized in a forest management contract consisting of two parts:

- a guaranteed volume from a defined but non-exclusive territory;
- production objectives.

A Volume of Wood Fibre From a Defined Territory

For mills with an annual roundwood requirement in excess of 50 000 cubic metres, the existing quota system, based on awarding concessions and assured supplies, is replaced by guaranteed access to a volume of wood from a territory defined on a sustained yield capacity basis (freeholds being included in the calculation).

The territory identified must therefore be sufficient to support the volume allowed and will be determined according to the calculation rules defined above which incorporate not only the assumptions with respect to harvesting procedures, but also the results of management measures included in the basic management. As a result, the territory thus defined will support the volume allowed only if the user complies with the harvesting procedures and undertakes the measures foreseen in his production objectives, and if areas which have not been regenerated (backlog) are brought back into production.

For mills whose roundwood requirement is less than 50 000 cubic metres per year, the guarantee will be restricted to the volume allowed and to the definition of a territory which can support this volume for the duration of the contract. However, the Ministry will define the territory in such a way as to integrate it within a management unit capable of supporting the overall need based on a calculation of the sustained yield capacity. Users will thus be guaranteed supplies on a sustained yield basis.

Production Objectives

A quota of roundwood from the public forest carries with it the obligation that the operator bring the territory corresponding to the quota back into production. This means that every user who holds a quota in the public forest will be required to return all logged areas to production within a set period of time, at his expense, and to a level at least equal to that of the stands in existence prior to harvesting. Consequently, the legislation concerning the forestry fund will not brought into force. In addition, every user will be required to adapt his activities in such a way as to protect the various production functions of the forest.

In return, the Ministry is bound by two obligations: it must ensure that areas which up to now have been poorly regenerated or not regenerated at all (backlog), are brought back into production, and that sufficient seedlings are produced for all reforestation activities. This work may be entrusted to users, to organizations such as forest cooperatives, or to private companies, or it may be undertaken by the government. The responsibility for restoring areas damaged by future fire or severe epidemics will be shared by the Ministry and the users.

Specific production objectives will be assigned to each territory based on its characteristics. As the objectives will be an integral part of the forest management contract, each user will have to prepare a management plan which complies with the management manual the Ministry will publish and enforce. If users fail to carry out their work, the Ministry will complete it and will bill the users for expenses.

Harvesting in mixed stands and returning them to production present a major logistical problem which can be resolved only by integrated cuts. The Ministry intends to impose such integration. How the integration is implemented will depend on local characteristics. Users may choose one of the following formulas:

- the users in question group together;
- the major user in a territory undertakes to harvest and return the land to production;
- Rexfor undertakes to harvest and return the land to production.

Features of the Forest Management Contract

The duration of the forest management contract will vary depending on the products involved, the species of tree and the type of user. However, in every case, the decision as to renewal will depend directly on the achievement of the production objectives set for the territory.

The Guarantee for Softwood (Pulp or Sawing) or Hardwood (Pulp)

Quotas for mills will be good for 25 years, renewable every five years for a futher 25-year period. Renewal will depend essentially on the achievement of the production objectives for the territory.

The actual annual harvest may reach a maximum of 110 percent of the volume guaranteed provided that, over a five-year period, the average harvest volume does not exceed 100 percent of the guaranteed volume.

Every five years, any user who has achieved the initial objectives for his territory may approach the Ministry with a proposal to modify the assumptions used to calculate the capacity, so as to increase the guaranteed volume. Changes may affect harvesting procedures (harvesting the biomass, harvesting on slopes in excess of 50%, improved utilization, etc.) or forest management measures (tree farming, short rotations, thinning and fertilization). Assessment of the degree to which the stated objectives have been achieved will thus also be based on compliance with the new calculation assumptions.

In cases of intensive management, that is, where results exceed the production objectives stated in the contract, the volumes produced will be awarded to the user so that he can expand his industrial output.

The Guarantee for Quality Wood (Hardwood, White and Red Pine)

Quotas for mills will be good for 10 years. They will be renewable after five years, provided available stocks are sufficient, but may involve a territory other than the original one.

The annual harvest may reach a maximum of 110 percent of the volume guaranteed provided that over a five-year period, the average volume harvested does not exceed 100 percent of the guaranteed volume.

Every five years, the user may approach the Ministry with a proposal for new assumptions as to the calculation of the allowable volume (in particular because of the impact of integrated harvesting and intensive management which may involve reforestation).

Standby Guarantees

Any user with long-term agreements for volumes of wood chips and wood from private forests may obtain a standby guarantee in the public forest for the duration of these agreements.

In the case of wood which may originate in private forests, this guarantee will be effective in the territory supporting his quota and under the following conditions:

- it applies when all economically available sources fail to supply the shortfall which cannot be shipped as agreed;
- the total volume harvested may not exceed 125 percent of the guaranteed volume for the territory;
- it entails an equivalent reduction during subsequent years so as to maintain the sustained yield.

The same conditions apply for chips, although this guarantee will apply to territory allocated to a user who is unable to provide the full volume of chips stated in his agreement.

Breach of Contract Clauses

The forest management contract may be cancelled at any time in the following cases:

- non-payment of royalties;
- non-payment for work undertaken by the Ministry on behalf of a user who has failed to meet his obligations;
- final shutdown of a mill;
- non-compliance with the Ministry's rules and regulations.

With respect to the sale or transfer of a mill, the government intends to pursue its current policy under which the Minister responsible for forest management is vested with discretionary power in matters respecting the utilization of allowances in public forests. Therefore, any such transaction may be carried out only under such conditions as the Minister may set.

Changes to the Territory

The territory defined for each user is located within the "forest production zone", which is one of the components of the land use plan. The land use plan cannot remain static, nor can the regional county municipality development plans to which it gives rise. Adjustments will be required on a regular basis to adapt to new, unforeseen needs or to keep pace with the qualitative and quantitative growth in the needs of Québec society. Each management contract will therefore contain a reserve clause allowing for the necessary adjustments. This clause will provide that, in the public interest, the government may authorize other uses on the territory concerned. Such action may be taken without compensation if the territory involved does not exceed five percent of the territory allocated to the user and if the user has not undertaken any development activity therein.

Periodic Review of Quotas

When a contract is due to be renewed, the Minister will modify the quota in the following cases:

(1) failure to comply with the production objectives (possibly leading to non-renewal of the contract);

(2) changes in the requirements of the production unit under a forest management contract (provided, in the case of an increase, sufficient leeway is available);

(3) reduction in the public forest capacity as a result of natural catastrophes (forest fire, uncontrollable epidemic, etc.);

(4) average harvest volume over five years significantly below the allowance;

(5) changes in the distribution of supply sources other than public forests, either due to a reduction in the production of chips or wood from private forests, or because of an increase in the production of chips or in the capacity of the private forests.

The Ministry intends to set up an independent arbitration board to hear any party which may consider itself to have been wronged as a result of the decisions taken be the Ministry solely and specifically with respect to points 4 and 5. The arbitration board's decisions shall be executory, but may bear only on a decrease in guaranteed volumes in the public forest as a result of an average harvest below the initial quota, or of a change in the distribution of supply sources. Since the board's decisions on these matters are executory, appeals must be made before the appropriate judicial bodies (Superior Court).

The Fee Structure for Harvested Wood

Any operator who harvests or takes possession of wood on public land must pay a royalty to the government for the wood harvested. Such royalty will be based on the market value of stumpages.

This value is subject to market fluctuations which are particularly sensitive to the following factors: the interplay of supply and demand, prices, purchasing power, operating costs and the location of the resource. The royalty charged to each user will be based on market value but will take into account all pre and post-harvest obligations such as restoration to production, and protection.

Royalties will be determined by species or groups of species on the basis of a division of the territory into zones, with due allowance for difficulty in harvesting and the quality of the wood, among other factors. Adjustments will be made periodically.

Optimum Utilization of Wood

While the Ministry will attempt to determine adequate territories on the basis of the anticipated utilization, it intends to encourage optimum utilization of available wood in each territory under a quota.

Thus, the following measures will be applicable whenever there is a purchaser for large-diameter logs:

- stems suitable for sawing, based on the characteristics of each region and existing processing technology, must be offered to sawmill operators determined by the Ministry;
- such volume must be replaced by a similar volume of fibre of equivalent quality and density;
- the regular royalties applicable on the volume will be reduced by up to 50 percent of the initial rate set for the harvest zone in question.

5

DEVELOPING THE PRIVATE FOREST

Private forests cover an area of 62 800 km^2 and account for 10 percent of Québec's productive forests. They are located for the most part in southern Québec and belong to some 120 000 owners. Although their role is often misunderstood in comparison to that of the vast public resources, private forests are nevertheless an important source of supply for industry. The development and exploitation of these forests has a significant economic and social impact on a large number of rural municipalities. They must become an even greater source of supply for the mills if the forest sector is to continue developing.

THE PROBLEMS

A Changing Ownership Structure

For a long time, private forests were associated with agriculture. Most private forests were owned by farmers who used them as a source of materials and for supplementary income from time to time. However, as agriculture developed, the production of wood in such forests became less and less important. Thus, farmers today account for only 35 percent of private forest owners compared to over 50 percent in 1973. The production of wood fibre on private land has thus become a business in itself, largely independent of agriculture. Moreover, the ministère de l'Agriculture, des Pêcheries et de l'Alimentation (M.A.P.A.Q.) does not consider using land for the production of wood fibre as an "agricultural activity". However, wood originating in private forests is considered an "agricultural product" and as such is subject to the marketing methods for agricultural products. As a result of this historical context, there is a certain overlapping of lands used for agricultural and forest production.

Current owners of private forest land have a variety of objectives and aspirations. Most owners periodically harvest wood fibre to supply industry, and engage in other activities as well. For most of them, producing wood is a supplementary activity which does not generate the larger part of their income.

Over the years, different categories of forest property owners have emerged, from the speculator to the tree farmer, from the cottage owner to the processing company wishing to ensure a portion of its supply. Considerable variation is observed from one category to another with respect to the desire to produce wood fibre, and the financial and technical means available. The Ministry's activities must therefore reflect these new realities.

Marketing Difficulties

Private forests currently provide roughly 20 percent of industrial fibre requirements, although this proportion may range from 5 to 90 percent depending on the region. However, two-thirds of this production is made up of softwood logs used for pulp. Over the past ten years, the pulp and paper industry has undertaken significant technological changes to improve productivity, with the result that its utilization of chips has risen. During the same period, the sawmill industry has become the major user of roundwood. Chips produced by the sawmills thus compete directly with wood from private forests both as to price and volume.

Supply and Demand: A Precarious Balance

The estimated softwood harvest in private forests matches and probably even exceeds their current capacity. At the present time, it is difficult to accurately assess the capacity of and, especially, the harvest from private forests, because of the large number of holdings, the varied objectives of property owners, incomplete forestry data, the different harvesting methods and, finally, insufficient knowledge as to the destination of harvested wood.

	Capacity[1] '000 m^3			Harvest[2] '000 m^3		
	Large forests	Small forests	Total	Large forests	Small forests	Total
Balsam fir, spruce, jack pine	700	4 000	4 700	900	4 500	5 400
Other softwood species	50	1 400	1 450	n.s.	n.s.	n.s.
Hardwood	700	6 900	7 600	200	1 700	1 900
Total	1 450	12 300	13 750	1 100	6 200	7 300

As the above table indicates, this situation contrasts with an underutilization of hardwoods which, in the private forests, are mainly made up of poor quality stems or species for which there is little demand.

Inadequate Development

Given their biophysical characteristics, private forests could produce more if they were subject to more intensive management. Owners of forest land currently have little incentive to invest in improvements to their land in view of the low return on investment and the lack of technical equipment and knowledge. They maintain that the low return on investment is due to many factors, including difficulty in disposing of production, low selling prices, as well as the property tax system and other taxes which discourage forest production. Furthermore, property owners demand a better system of protection against insects, a need which has been demonstrated by the considerable damage caused by the spruce budworm epidemic. Finally, the needs of property owners and the characteristics of forest lands vary greatly from one region to another.

1. Annual harvest capacity estimated according to the VON MANTEL method.

2. Estimated data for 1983-1984, excluding firewood which is estimated at roughly 1.8 million cubic metres.

The development of private forests also raises the problem of organization among property owners. Private resources are not managed by a single organization able to determine objectives and guidelines. Responsibility for management clearly rests with the individual property owners who have, however, united to set up various organizations with specific mandates. These cannot be ignored and, with the support of the property owners themselves, they must contribute to harmonize and, to a certain extent, plan the management of private forests.

Excessive Selectivity in Providing Assistance

As the government agency which must encourage forest sector development, the Ministry has certain responsibilities with respect to the development of private forest resources. Although ultimately designed to improve a private resource, the Ministry's actions are justified to the extent that they are effective and generate benefits for the wider collectivity.

The prerogatives of property ownership preclude the Ministry from imposing its management objectives on property owners so that, up till now, the Ministry has focused a great deal of its effort on having property owners associate so as to form blocks of forest land over which management activities would be planned. However, such associations have failed to reach more than ten percent of private property owners. As a result, by far the largest portion of financial and technical assistance has been awarded to a relatively small proportion of property owners.

THE INTERVENTION PROGRAM

Because of the special characteristics of private forests, the intervention strategy must satisfy certain principles:

1) the private forest is a distinct production unit, which is to say that it is neither a block of resources to be liquidated over a given period of time, nor a reserve to be kept for the future;

2) measures aimed at property owners must be based on incentives, and the property owners must be free to choose whether or not they will take advantage of these measures;

3) government assistance must be available to all property owners, that is, it must reach the maximum number of property owners interested in producing wood fibre.

In the short term, the Ministry wishes to allow the optimum utilization of all supply sources, including the private forest. In the medium term, it will be impossible to satisfy industrial requirements without greater production from private forests, particularly with respect to softwoods (balsam fir, spruce and jack pine). In view of the situation, property owners will have to become more interested in producing softwood and quality hardwood in order to diversify their range of production. The measures that have been adopted are all aimed at encouraging private initiatives:

- by encouraging the emergence of a favourable framework within which property owners can produce wood fibre;

- by encouraging adequate management of private forest resources by taking charge of certain basic activities;

- by providing direct assistance in the form of subsidies to property owners.

Recognition of Active Forest Producers

A property owner or company will be recognized as a forest producer if he or it owns a minimum of ten hectares (ha) in a single block used for forestry purposes and if he is actively engaged in its development for the production of wood fibre. In the short term, his land must be brought under a simple forest management plan. The Ministry itself will be responsible for according recognition to forest producers upon their request and, as a result, will set up the necessary processing structure. The mechanism will include identification of the land so as to provide the Ministry with more accurate knowledge of privately owned territory devoted to forest production.

Recognized forest producers will enjoy certain privileges, particularly with respect to property taxation. In fact, 85 percent of property taxes paid on forest property which is in production will be refunded.

The status of forest producer is open to all forest landowners, regardless of the amount of land they own in excess of ten hectares, or of whether or not they own processing mills and belong to a joint management organization. Recognition as a forest producer will be made a minimum requirement to qualify for several Ministry programs such as Crédit forestier, or for the purchase or rental of public forest land, and subsidies for management activities. However, certain programs will be applied differently according to the specific categories of forest producers.

Marketing

Bringing private forest land into production only makes sense if the wood produced generates sufficient income to justify the required investment.

Two measures have been adopted in this respect. First, wood originating from private forests - whether as logs or chips - will be given priority in supplying mills which have a guarantee in the public forest. Second, long-term agreements between producers and users will be encouraged.

Priority to Wood from Private Forests

Wood fibre from the public forest will be considered a supplementary source of supply for mills. From now on, utilization of chips and wood from private forests will be given priority.

The review of quotas which will be undertaken as a result of this new approach will give the Ministry the opportunity to adjust them on the basis of harvests normally available from private forests. However, production levels greater than the capacity of private forest lands will not be considered. The capacity will be calculated on the basis of a long-term sustained yield for each territory under a common plan. Since private forests supply various categories of users, as a general rule only the wood marketed by syndicates and marketing boards will be considered. Furthermore, the calculations of mill requirements and production levels will be reviewed every five years to allow for any quota adjustments made necessary by changes in private production. Follow-up provides essential information for achieving a sustained yield in the private forest. This entails the inventory, not only of allowable volumes, but also of harvests. The Ministry, along with organizations concerned with the private forest (syndicates and boards) and property owners, must be in a position to control harvest levels in order to avoid over-cutting in private woodlands and so ensure uninterrupted growth in production.

The priority granted to private forests in the allowance should provide producers with greater negotiating power with respect not only to volume, but also to price, provided they comply with the established production levels.

Standby Guarantees

Private producers and industry both stand to gain from signing long-term supply contracts. Producers are assured of an outlet for a more or less significant portion of their production, which enables them to better plan their cuts and earn a more stable income more rapidly. Industry, on the other hand, can count on a reliable supply and plan its operations accordingly. However, while companies can, to a certain degree, adjust the amount they draw from various sources, producers normally deal in a market with few buyers, and must contend with uncontrollable factors affecting their level of production.

To enable producers to sign long-term agreements, covering a minimum period of three years, and to ensure reliable supplies to industry, the Ministry will guarantee those firms with a quota in the public forest that, should private property owners fail to provide the quantities negotiated, they will be awarded annual cutting licences on the public forest to make up for the shortfall. However, this guarantee will apply only if long-term contracts have been signed between the producers and the firms. It will not apply if there is disagreement over prices; the Régie des Marchés agricoles will continue

to exercise its role as arbitrator. To offset this supplementary harvest in the public forest, so that the harvest level determined according to the sustained yield principle is observed, the user will normally have to increase his scheduled purchases from private producers during subsequent years.

A Land Regrouping Program

Intracity territory includes a significant quantity of public land that is scattered or enclosed, or that borders on private forests. Included are 2 000 km^2 of public land occupied illegally or under dubious title, 2 000 km^2 of scattered, vacant wood lots under the jurisdiction of the ministère de l'Énergie et des Ressources, 3 000 km^2 of vacant wood lots under M.A.P.A.Q. jurisdiction, as well as vacant public wood lots and those grouped into domanial forests. The Ministry already encourages the regrouping of private forests and intracity public forests through the exchange of lots and sale of public lands, and will continue to do so. It will also pursue the current program of normalizing dubious titles.

Furthermore, the Ministry will harmonize its policy with that of the M.A.P.A.Q. which is designed to privatize public lots under its jurisdiction, and will make public lots available so as to encourage the formation of blocks of forest land suitable for wood fibre production.

The objective of this joint program is to develop economic activities based on a mixture of agriculture and forest production (e.g., animal husbandry and tree farming).

Providing Basic Services

Some activities, because of their very nature, cannot be undertaken by individual property owners. Such is the case, for example, for detecting insect epidemics, compiling an inventory of the resource, and research.

The government thus intends to intervene directly to provide the basic services property owners need to bring private forest land into production.

Protection

The government already provides protection against forest fires through the efforts of the Sociétés de Conservation, and the existing system is considered effective. The Ministry will improve insect and disease detection in order to pinpoint any possible outbreak of epidemics as soon as possible. Property owners will be provided with technical advice on control measures, and will be responsible for administering the treatment required. Certain treatments associated with the fight against insects or disease will be eligible for subsidies under the financial assistance program outlined below. If property owners wish, treatments involving pesticides may be contracted out to the Sociétés de Conservation which will henceforth be responsible for carrying out such treatments in public forests.

Knowledge and Research

The development of private forest resources rests on an adequate knowledge of existing resources, their condition and how they are changing. Such knowledge must be updated on a regular basis. The Ministry will continue its efforts to complete an inventory of private forest lands and to publish the forestry data required for their development. In addition, it will set up a follow-up system for the harvest of wood fibre. This will be carried out in cooperation with the syndicates and boards, in the case of wood marketed by these organizations, and with the users, in the case of other volumes.

Public and private forests can benefit from basic and applied forestry research. Significant efforts will thus be undertaken in areas of interest to private forest production. The Ministry will coordinate these activities in cooperation with other parties involved. For this, it is anticipated that representatives of forest producers will take part in the research planning organization which will be set up.

Technology Transfer, Popularization and Promotion

Owners of forest land are often in need of general or technical information. Considerable improvement could be made in popularizing and distributing technical knowledge and research results. A permanent group of specialists will thus be created to produce and publish documents dealing with forest management. In addition, forest education centres will be used as demonstration sites in order to achieve a "technology transfer" from the specialists to the forest producers.

Finally, the government will continue to sponsor the Concours du Mérite forestier in order to promote private forest management and recognize the expertise of forest producers. Organization of the contest will be improved, and larger prizes will be awarded.

Financial and Technical Assistance

Measures providing direct assistance to private producers have been designed to respect the prerogatives of the property owners and to make maximum use of existing structures. They are not intended to compete against private initiatives designed to encourage private forest management, such as the Fonds forestiers régionaux or silvicultural corporations. Rather, they complement and encourage such initiatives.

An Assistance Program for Individual Producers

The new technical and financial assistance program for individual producers undertaking certain forest management activities is undoubtedly the most important of the new measures. The program has two parts: developing a structure to provide technical assistance to individual producers, and granting subsidies directly to individual producers about to undertake silvicultural treatments.

- Technical assistance

As a general rule, individual forest producers do not have the technical knowledge required to carry out sound silvicultural work and many individual producers do not have the financial means to acquire adequate technical services. Moreover, in many regions, it is difficult to obtain the services of companies skilled in this area. Stepped-up forest management activities among individual producers will require that appropriate technical expertise be available.

Syndicates and marketing boards were set up by owners of woodlands seeking to market their production. Over the years, many have acquired varying degrees of technical skill in forest management. These organizations are well established and accessible, and are managed by the property owners themselves.

The Ministry will put these existing organizations and their technical skills to greater use by offering them service contracts by which they will be able to provide the necessary technical assistance to all individual producers. The recognized forest producer wishing to prepare basic management plans, for instance, will thus find technical advisory services at the syndicate or marketing board to which he already belongs. However, this service will not be available to processing companies owning wood lots, except for those processing 1 500 cubic metres solid, or less, per year. Owners of forest land who have received a loan from the Crédit forestier will be required to prepare a basic management plan according to the existing terms and conditions.

- Financial assistance

The development plans currently being designed by the syndicates and marketing boards will be used as input for establishing, in each administrative region, a regional management program based on the objectives and priorities of the property owners and the Ministry. This management program will be developed in collaboration with the syndicates and marketing boards concerned. In each region, an overall subsidy amount, broken down

according to the type of silvicultural work undertaken in the region concerned, will be provided, based on the budgets voted for this purpose by the National Assembly. In this way, private forest management will satisfy specific regional needs. A property owner must be recognized as an active forest producer to be eligible for the subsidies.

Financial assistance will also be available for certain types of treatment against insects or disease. The use of biological insecticides (B.T.) in particular will be subsidized under the current program.

Continuation of the Program of Grants to JMOs

Over the years, joint management organizations (JMO) have acquired expertise in the execution of silvicultural procedures in private forests. They have also developed skilled personnel, an important consideration if such work is to be successful. JMOs are thus able to carry out satisfactory silvicultural work in private forests. However, they are currently active on less than 10 percent of private forest land. To become financially independent, the JMOs will have to become veritable companies ready to undertake silvicultural projects in private forests. So as to consolidate their experience and enable the JMOs to carry out the required organizational changes, a program of grants to certified JMOs will be maintained. This will allow individual producers to make use of JMO services to complete the work foreseen in their management plan.

The Crédit forestier

The Crédit forestier will continue to offer loans to producers who wish to purchase forest land, or machinery, or to finance development or the installation of infrastructures. The Crédit forestier has recently been expanded to finance companies producing saplings for reforestation. It will continue to provide its services according to the existing formula and the Ministry will harmonize its lending policy with the other financial assistance measures.

6

OPTIMAL PROCESSING OF THE RESOURCE

If the forest sector is to maintain its current position in Québec's economy, more must be done than simply making wood fibre available. It is equally important that the processing industry be adapted to the situation which will prevail in the future.

DEVELOPMENT POTENTIAL

Six factors have a direct influence on the growth of Québec's forest industries.

The first is the life cycle of any given product and is extremely difficult to alter, although it has a major impact on investment. Thus, whereas chemical-mechanical pulp is in the initial phase of its commercialization, such is not the case for wrapping paper which is in decline because substitutes were introduced on the market.

The second major factor is the availability of raw materials. The development of the forests will enhance the potential of marginal supplies and will thus become a major growth factor.

Other factors having a major impact on the future development of the industry are the availability of funds and specialized manpower, the existence of potential markets, and the competitiveness of the processing industry.

Analysis of the existing situation, as illustrated in the following table, clearly indicates that potential for development is greatest in fibre processing, particularly softwood fibre. The government's strategy is thus geared to improving elements which are crucial to the growth of the forest sector, through a long-term policy of strengthening the "fibre connection".

DEVELOPMENT POTENTIAL IN QUÉBEC FOREST INDUSTRIES

GROWTH FACTORS

- **Competitiveness (marginal)**: insufficient o; low -; average +; high ++
- **Availability of skilled manpower**: low -; average +; high ++
- **Market potential (supplementary)**: none o; low -; average +; high ++
- **Availability of funds and investors**: low -; average +; high ++
- **Potential marginal supplies**: none o; low -; average +; high ++

PRODUCT (subsector)	STAGE IN THE PRODUCT'S LIFE CYCLE	Competitiveness (marginal)	Availability of skilled manpower	Market potential (supplementary)	Availability of funds and investors	Potential marginal supplies	DEVELOPMENT POTENTIAL
PULP AND PAPER							
NEWSPRINT	mature	+	+	-	++	+	average
SOFTWOOD MARKET PULP	mature	-	+	++	++	++	low
HARDWOOD MARKET PULP	mature	++	-	-	++	-	low
CHEMICAL-MECHANICAL MARKET PULP	young	+	++	++	++	++	high
CARDBOARD	mature	++	-	-	++	+	low
PRINTING AND WRITING PAPER	mature	++	+	+	++	+	average[1]
SANITARY PAPER	mature	++	+	+	++	+	average
WRAPPING PAPER	declining	++	-	-	++	-	none
THE WOOD INDUSTRY							
SOFTWOOD LUMBER	mature	-[2]	+	-	++	+	low
SHOP WOOD	mature	o	+	+	++	+	none
SPECIALTY WOOD	mature	+	+	+	+	+	average
HARDWOOD VENEER	mature	o[3]	+	+	+	+	low
HARDWOOD PLYWOOD	declining	o	+	-	+	-	none
STANDARD PARTICLE BOARD	mature	+	-	+	+	+	average
THIN PARTICLE BOARD	growth	+	+	+	-	+	average
THIN FIBREBOARD	growth	++	+	+	-	+	average
WAFERBOARD	growth	+	+	++	+	+	high
INSULATING BOARD	declining	++	-	o	+	+	none
SHINGLES	mature	-	+	+	+	+	low
LATHS AND SPOOLWOOD	mature	++	+	-	+	+	low
TURNERY	mature	+	+	-	+	+	low
WOODEN CONTAINERS AND PALLETS	mature	++	+	+	+	+	average
FLOORING	mature	+	+	+	+	+	average
POSTS AND PROPS	mature	o	+	+	+	+	none
WOOD PRESERVATION TREATMENT	growth	[4]	++	++	++	+	high
CHARCOAL AND BRIQUETTES	declining	++	+	-	+	-	none
FIREWOOD	mature	++	+	-	+	+	low
ESSENTIAL OILS	mature	+	+	-	+	o	low
CHEMICAL PRODUCTS	young	++	-	+	-	o	low
BIO-INDUSTRIAL PRODUCTS	young	++	-	+	-	o	low
OTHER ENERGY USES	young	++	-	+	-	o	low

1. This assessment assumes that the Domtar (Windsor) project will be approved. The potential for expansion in the sector is average, but would be higher for specialization projects (increasing value added).
2. Generally, zero potential (o), though this could change to low (-) if the industry accepted the inevitable relocations.
3. ++ for slicing mills using imported square-cut wood.
4. Not applicable.

DEVELOPMENT STRATEGIES

Three major themes predominate in these strategies:

Improved Processing of the Existing Resource

Given the relative scarcity of the resource, harvesting areas which are increasingly far away, the decrease in the average diameter of logs harvested, and, finally, the need to reduce the production costs of an industry in a state of relative decline, it is important to improve the processing of what does exist, and thus to:

- facilitate any measures which help conserve wood;
- assist in the establishment or expansion of companies seeking to utilize all the resources which are harvested but not currently processed.

Industrial Development Attuned to the Available Resource

Given the difficulties raised by an uncertain long-term supply, both in quantity and quality, and in view of the excess supply of hardwood, steps must be taken to:

- encourage the installation or consolidation of industrial components adapted to the resource;
- improve industrial components by introducing new processing technology so that existing "surpluses" can be utilized.

Maximizing the Economic Impact of Wood Processing

In order to generate optimum economic activity from the forest as the supply of wood decreases, the Ministry must seek to maximize the economic impact produced by the processing of all fibres. The following measures, which take into account both the government's social responsibility and market forces, have thus been adopted:

- preference will be given to companies which maximize value added (or the amount of processing carried out in Québec);
- those elements which maximize positive economic impact (value added, employment) will be encouraged through quotas;
- greater diversification of output and markets will be promoted, so as to better prepare the industry for cyclical fluctuations in demand and increase the level of economic activity in the forest sector.

The Pulp and Paper Industry

Analysis of the problems facing the pulp and paper industry points to two types of action, one aimed at existing industries and the other designed for new investment projects.

Modernization of the Existing Structure

The greater part of the government's action over the past six or seven years has been concentrated on the modernization program (1979-1984). The results of the program demonstrate that the government should continue its involvement. The five-year program has helped bring a halt to the pulp and paper industry's decline on international markets. However, investments made in Scandinavia and the Southern U.S. are at least equal to those in Québec, and there is nothing to indicate that these efforts will diminish. Moreover, the current profitability of newsprint manufacturing is due largely to the exchange rate differential between the Canadian and U.S. dollars, a rather uncertain factor. This risk can be reduced and the competitiveness of Québec's industry maintained by reducing production costs and making up lost ground in industrial technology.

A comparative analysis of newsprint machinery used in Québec, the southern U.S., the West Coast and Scandinavia reveals that on average, machinery in Québec is older and therefore slower and narrower. The situation is similar in other pulp and paper sectors, though it is better for market pulp. Even in the specialty paper sector, where conversion has already begun, market conditions demand the use of larger manufacturing machinery.

Investments estimated at 4 billion dollars will be required over the next ten years to close this technological gap. It appears likely that the industry is capable of generating sufficient funds for an investment of this magnitude over this period. However, since these investments are vital if the industry is to maintain and, especially, improve its ability to compete, incentives in the form of government financial assistance are justified. This assistance could apply to certain projects which may be less profitable but are strategically important in the medium term.

The government will be involved in two ways:

- specific assistance adapted to the nature of each case, e.g., reactivating mills with an uncertain future or which have been shut down, and the eventual reconstruction of certain production units;
- incentive measures to encourage the investment required to transform mills for different production purposes. These measures, which will not be introduced as direct subsidies, will be adjusted to reflect the available public funds, the attitude of the federal government in this area and the ability of companies to generate financing from their profits.

Stimulus for Development

A variety of measures to stimulate the establishment of new processing mills are provided:

- allowances based on available leeway;
- direct financial assistance for carrying out preliminary feasibility studies;
- direct assistance for the completion of necessary infrastructures;
- reduction in certain cost elements associated with supply (building forest roads, for example).

Four regions are singled out for attention in view of their potential: Bas-Saint-Laurent--Gaspésie, Outaouais, Côte-Nord and Abitibi.

The Wood Industry

The wood industry must deal with a number of factors affecting its profitability: the obsolescence of some machinery, vulnerability to exchange rate fluctuations, a weak marketing structure, and the precarious financial structure of certain companies.

With respect to machinery, the sawmill industry has recently acquired some large production units and has modernized several existing mills. In so doing, it has increased its productivity from 0.18 to 0.27 cubic metre/man-hour, in spite of the reduction in stem diameters. However, this productivity is no better than the North American average.

The availability of capital is a problem for those wood industry sectors (boards, for example) which demonstrate some potential for expansion. Moreover, because of their weak financial structure, the companies cannot themselves make the required capital investments, and are thus pushed towards an early technological old age.

The government must act in such a way as to minimize the negative impact of these various factors. Two series of measures are contemplated, a program of direct assistance to improve productivity and the use of incentives to encourage the industry to adapt to the existing resource.

Direct Assistance

The government will focus on the range of sectoral or horizontal programs currently available and will pay particular attention to informing and advising industries in regard to these programs.

Under the Programme de consolidation et d'expansion de l'industrie du bois (P.C.E.I.B.), administered by the Ministry, the government will introduce a measure dealing with assistance for the conversion to high technology. This addition to the program will encourage the industry's conversion to advanced technology, with investments designed to maintain output and raise the sawmill productivity. Assistance will take the form of subsidies for investment projects where it is clearly demonstrated that output will be maintained or productivity improved, allowing for supply conditions. Based on a feasibility study, government assistance could reach 35 percent of the total investment and may include high technology equipment, construction and the inherent engineering costs.

Other programs, such as those administered by the Société de développement industriel and the Office de planification et de développement du Québec, will be used by the government to encourage the industrial sector. These include programs of assistance for investment, for financing manufacturing companies, for export assistance and the Programme expérimental de création d'emplois communautaires (P.E.C.E.C.).

Incentive Measures

Since quotas are still a powerful tool in the development or orientation of industrial activity and the wood fibre supply is the major limiting factor in the wood industry sector, particularly for softwood sawmills, the Ministry will encourage the rationalization of supply and a reorientation of industrial activity through the use of quotas.

In view of the distribution of wood supplies, various measures will be enacted to provide particular encouragement for the relocation of production units on the basis of available resources. While maintaining an equivalent level of local economic activity, the Ministry aims to introduce greater diversification in the industry's components, so as to transform its structure.

Finally, in cooperation with the industrial associations involved, efforts will be undertaken to diversify markets, promote Québec-manufactured wood products in foreign markets and penetrate certain overseas markets.

The Industry's Ability to Compete

Taxation is an important business factor for the forest industry and the government intends to study the various mechanisms associated with taxation in the forestry sector so as to emphasize measures capable of improving the competitiveness of Québec's forest industry.

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RESEARCH FOR THE BENEFIT OF THE FOREST

Forestry research is proving to be an essential tool for the management and development of the forest sector today. If Québec acknowledges that its development is based on scientific and technological progress, then it must focus its attention first and foremost on how such progress can be used in the forest sector.

AVENUES OF RESEARCH TO BE PURSUED

A distinctive aspect of forestry research is that it works on two different time frames. Research into forest production involves a time frame which can span one hundred years, while research into the processing of this resource have a shorter time frame, generally of under ten years (which is considered short-term in forestry). This peculiarity has a significant impact on the structure, planning and financing of research activities.

Essential Needs to Be Met

"Preserve, develop and utilize the forest for the well-being of society as a whole" is the practical objective of this policy statement. Implementing the policy will require knowledge and the development of techniques in all fields of activity related to protecting the forest, developing forest land and processing the resource in an optimal way.

The various research organizations in Québec should thus direct their efforts to solving the problems related to these various fields so that vital technical expertise can be developed.

Protection of the Forest

As already mentioned, the terms and conditions of activity which will ensure protection of the various forest production functions require knowledge of the biophysical properties of the sites. However, this knowledge must be complemented by an understanding of the interactions between the forest components and the different human activities which affect them.

This research effort must produce harvesting and development methods which preserve the balance of nature.

Development of Forest Territory

Optimal development of the forest requires the appropriate techniques to ensure maximum production in the field, protection of stocks, optimal harvesting of wood fibre and, finally, efficient management of the forest resource.

Research must be undertaken on the following activities:

- Wood fibre production

A major research and development effort is needed to increase our knowledge of the forest and help us find the most effective methods for increasing its productivity: the dynamics of forest ecosystems and their growth, management of degraded forests, basic genetics, tree farming, reforestation and sapling production techniques, as well as plantation upkeep and preparation of sites with minimum use of phytocides.

- Forest protection

Optimum wood production requires not only that existing forests be adequately protected, but also that the same protection be extended to newly created stocks of wood. This can be achieved only through more effective protection so that losses due to fire, insects and disease are reduced.

As a result, there is reason to expand research and development efforts with respect to tree diseases and biological methods for fighting insects.

- Harvesting

It is obviously important that adequate supplies of wood fibre be available for the processing mills, but it is no less important that supplies be available at a cost which does not threaten the competitiveness of these mills on international markets.

However, our concern to keep the cost of wood at an acceptable level should not blind us to the need for improved harvesting methods to ensure better natural regeneration based on the general socioeconomic context, and to the importance of having forestry manpower which is skilled in the new wood harvesting methods.

As a result, priority must be given to establishing research and development programs which focus on operating methods and systems, the mechanization of silvicultural activities and human resources management.

- Resource management

Management of the forest resource, both on private and public land, must take into account Québec's legislation and forest policies, as well as the interaction between the biophysical supply and the demand for goods and services which the forest territory must satisfy. Effective management of the forest resource implies that the problems related to these interactions can be identified and that the tools needed to define and apply solutions in the form of management activities are available.

Optimal Processing of the Resource

The development of Québec's forest sector is tied to that of its forest industries. These industries must be productive, backed by the necessary capital resources; they must dominate markets by aggressively marketing their products, and they must be assured of sufficient supplies of quality wood fibre.

In this, the industry's competitiveness depends largely on its productivity, which itself is influenced by the technology employed. That is where research, development and technology transfer play an important role in improving the current and future productivity of the industry.

As a result, in order to create a favorable economic climate and influence the production factors, research and development should be directed into areas likely to solve, or at least minimize, the industry's problems: finding new uses for under-utilized wood, the perfection of new products with greater value added, and the development of various technologies designed to increase mill productivity.

The result of these efforts must be the emergence in Québec of an industry able to export leading technology for processing the resource and developing the forest.

Priority Activities for the Ministry

The Ministry intends to be actively involved in research into forest production and forest sector management, within the research parameters which stem from the strategy adopted for Québec's forest industry. In the other areas, such as protection, harvesting and processing, it will call upon outside expertise (research centres, universities or other organizations). The Ministry has set itself the following research priorities:

- research into the systematic ecological cartography and classification of the inhabited area of Québec in order to identify and map ecosystems with the best potential for various uses, and those which are the most vulnerable;
- research into the dynamics of forest ecosystems, in order to better understand the mechanisms governing the cycles of forest components, plant regeneration and ecosystem decline;
- assessment of the impact of atmospheric pollution, particularly that of acid rain, on forest ecosystems, and experiments into possible ways of correcting the situation;
- research into growth in the major types of natural and artificial forest stands in Québec, including short turnover plantations, in order to obtain the necessary data for designing growth and production models according to management intensity and options (extent of silvicultural treatment);
- research into the terms and conditions of forest activity which will allow natural regeneration or its preservation;
- basic genetic research, and research into the improvement of species with a potential for hardwood and softwood reforestation;
- stimulate and encourage research where tissue cultures are used in the search to modify the genetic code of forest species so as to obtain fast-growing trees which resist epidemics, require less fertilizer and are better adapted to the needs of industry;
- step up research into the quality and physiology of seedlings to be used for reforestation, and into reforestation techniques;
- emphasize research and development into the elimination of "weed growth" in natural regeneration areas and reforestation areas, as well as into the environmental impact of such elimination;
- research and development into tree farming and short turnover in plantations and the natural forest;
- intensify research efforts into silvicultural and management activites in degraded forests in the high-productivity forest land located mainly in the inhabited zones of Québec;
- research into management systems for forest sector activities in the inhabited and industrial zones of Québec's forests;
- economic and sociological research in order to improve the management of the forest resource and thus the well-being of all Quebecers.

Getting Research Underway

A high-calibre organization in applied forestry research is needed to achieve these research objectives. It must be multidisciplinary, adequately financed and large enough to combine youth and experience in its areas of research.

The Ministry will therefore entrust to its research branch and other branches the responsibility for "intramural" research in fields related to wood fibre production and forest management. Measures will be taken to consolidate and strengthen the scientific team and provide it with the equipment and budget necessary to complete its planned research.

For research in areas in which it is not the principal participant and in which other groups may be active, the government will proceed by agreements or contracts with the organizations involved (universities, research centres, private companies, etc.) to undertake the research it considers necessary to achieve the forest policy objectives (protection, harvest, processing and basic research).

In view of the objectives related to bringing cutover land back into production, the Ministry, through formal agreement, will set up a cooperative organization mandated to undertake R & D into tree breeding. Indeed, breeding is essential if the objectives of the program for the regeneration and development of public and private forest land are to be attained. The federal government, industry and the universities will be invited to join the Ministry in these efforts.

COORDINATION: A VITAL ELEMENT

The government's strategy in the area of research and development must ensure that the ultimate goals of each research sector (ministries, universities, industry and private centres) are encouraged, with due regard for both their differences and interrelationship, and that attention is continually paid to their particular needs. It is thus primarily incumbent on those who work in these various sectors to see that this attention and encouragement are supplied.

In its support and development programs, the Ministry will take for granted that these ultimate goals act as basic criteria for all organization and management activities.

The government thus intends to assume its planning and coordination functions by adopting a structure which will enable each research sector to develop adequately.

The Conseil Consultatif de la Recherche forestière au Québec

Normally, the government's role in setting scientific priorities extends no further than formulating general objectives for economic, social, cultural and political development. It should be active in stimulating and supporting this goal-setting process by sharing responsibilities and initiating a general mechanism for dialogue between the government's representatives, groups active in the forest sector and the scientific community. Indeed, one of the Ministry's essential tasks is to put forward policies for development based on the forest resource, while it is up to the scientific community to convert these policies into research projects. The appropriateness of the research projects put forward, as measured against development priorities, thus becomes the major criterion used by the Ministry in promoting these projects and providing them with financial assistance. The underlying objective is thus to generate a productive dialogue between government, groups involved and the scientific community.

In view of the above, the Ministry will focus its efforts on joint planning. For this, it will be necessary to create a strong and well structured organization, with an official mandate from all the participants in the forest sector, to determine research and development needs and propose research objectives, along with the methods of achieving them as adequately as possible.

This organization, of the "advisory council" type, will be made up of three levels: the conseil itself, the coordinating committee and the various subcommittees, with a well organized secretariat providing support for all.

The Conseil's global mandate will include planning, orientation, coordination and follow-up for research and development (R. & D.) and scientific and technical information (S.T.I.) in any forest-related matter which may be of public concern. It will thus extend to every aspect and level of forestry, from basic research to the utilization of the forest and its products.

The Conseil itself will be made up of senior administrators known for their managerial abilities in major decision-making bodies, of persons with a broad knowledge of the forestry world and influence in decision-making.

The coordinating committee will carry out the planning, coordination and follow-up work for specific research projects and activities, thus in fact implementing the joint action between participants.

OTHER ASPECTS OF RESEARCH AND DEVELOPMENT

Training Researchers

Prospects for a growing number of researchers in the forest sector are rather bleak. This is due to the difficulty in recruiting researchers in the government, the lack of interest shown by Québec universities in research into the forest resource and the very small number of Québec doctoral students involved in forestry either at home or abroad.

This situation is not unrelated to certain weaknesses in financing university research in forestry, as well as to the lack of research programs or projects common to the universities and government research organizations.

Given the importance and the necessity of ensuring adequate manpower for forestry research and development, the Ministry, in cooperation with the ministère de l'Enseignement supérieur, de la Science et de la Technologie and the organizations involved, will provide support for university research in the forest sector and will cooperate in training specialists.

Financing

Several recommendations in the progress report on research in the forest sector suggest that financing for forestry research be increased or that new incentive measures be adopted. Many of the reports submitted suggested methods of increasing financing for forestry research.

Because of the special nature of forestry research, it is not enough to increase funding for steps must also be taken to ensure that the increased level of funding is continued. The government will implement the necessary measures to ensure sufficient funding for research, scientific and technical information, and scientific training. It will encourage the federal government, the forest industry and other participants to join with it in providing the additional financial backing it considers essential for the future of forestry in Québec.

Each year's additional contributions will be applied to finance forestry research both inside and outside the Ministry, and in the Centre québécois de l'information scientifique et technique and similar regional centres. It will also fund research grants and bursaries at the university and college levels.

Technology Transfer

Popularization and technology transfer are specialized fields which make use of sophisticated information techniques to enable practitioners to assimilate knowledge more rapidly and integrate it into existing practices more readily. Currently, there exists a substantial body of forest management (and harvesting) knowledge that is put to little use in Québec. Furthermore, this work is done by the research organizations themselves, a situation which does not encourage a smooth integration of research results into the production systems.

Since results which remain in the laboratory are not likely to be of any use to the forest sector, the communication of new ideas and techniques must become an integral part of research.

It is futile to advance the frontiers of knowledge if there is nobody to receive, understand and make suitable use of innovations and, especially, if the appropriate means for transmitting information to the ultimate user are lacking.

Like other sectors, the forest sector has R. & D. clients and users of science and technical systems at various levels, depending on the extent of their training. As a result, it is very important to adapt the methods to the characteristics and needs of each category of client, particularly the regions.

Québec needs a scientific and technical information centre for the forest sector. The centre would be staffed with forestry professionals and technicians specialized in the scientific and technical information methods best adapted to the various levels of the forestry clientele. At the provincial level, the Conseil Consultatif de la Recherche forestière au Québec would suggest objectives, priorities and programs to the centre.

The centre would be associated with regional centres charged with answering the requests of regional clients, and would undertake regional information campaigns and even promote forest management among private property owners.

The Ministry intends to make use of the specialized centre, known as the C.E.R.F.O.[1] inc., which the CEGEP de Sainte-Foy has just created, in cooperation with other CEGEPs which teach forestry. The latter could become regional centres with the cooperation of the member institutions of the Université du Québec and some comprehensive high schools.

1. Centre d'enseignement et de Recherche en foresterie de Sainte-Foy.

PART 3

Implementation Tools

8

LEGISLATION AND REGULATION

Legislation and the regulations which allow its application are the government's preferred instruments for implementing sectoral policy.

This chapter confirms this important role by illustrating the amendments which will be made to the various acts affecting forest management in Québec.

REVISING THE LANDS AND FORESTS ACT

The Lands and Forests Act

This basic instrument for the management of Québec's lands and forests has been added to and amended many times over the years. In view of the new forest system, in particular, which is the basis of the forest policy the government intends to implement, the Act will be completely revised.

The major amendments will deal with the integration of the following elements:

- henceforth, forests must be managed on a sustained yield basis;
- wood fibre quotas will be awarded as **forest management contracts;**
- every user who holds an assured supply will be required to return cutover land to production;
- the management manual setting out the rules to be followed in public forests will become part of the Act;
- an arbitration board will be established to hear parties who consider that they have been wronged in the revision of allowances;
- creating the Conseil Consultatif sur la Recherche forestière au Québec;
- delegating the responsibility for the operational aspects of the fight against insects and tree diseases to the conservation societies.

This revision, which is geared to the implementation of a new forest system, means that all existing forms of assured wood fibre supply in the public forest (forest concessions, supply contracts, special harvesting permits, etc.) will be abolished. They will be replaced by the forest management contract, whose standard form will be submitted to the Conseil des ministres for approval.

Regulations

While this operation is proceeding, amendments will be made to the Woods and Forests regulations, to introduce the following elements:

- the guidelines for forest activities which will govern possible activity when wood fibre is being harvested and when sites are being brought back into production;
- a mechanism for charging fees for harvested timber, based on market value;
- penalties for non-compliance with the conditions included in the forest management contract;
- the standards and rules affecting harvesting methods, management techniques, etc.

THE LEGAL NATURE OF FOREST PRODUCER STATUS

The active forest producer status will carry with it, apart from eligibility for subsidy programs for the completion of management activities, a refund of 85 percent of property taxes on property designated for forest production and, eventually, certain tax advantages similar to those enjoyed by agricultural producers. If this part of the action program is to become operational, it will be necessary to adopt a legal definition of the forest producer status, both with respect to the eligibility criteria and the associated advantages.

The following legislative amendments are thus envisaged:

- an amendment to the existing Lands and Forests Act, to include the definition of forest producer;

- amendments to the Taxation Act as well as to the legislation respecting the taxation of forest operations, to include therein the advantages related to forest producer status.

9

TECHNICAL AND ADMINISTRATIVE MEASURES

In order to implement the forest policy, the Ministry will have to adapt its administrative structure and develop a number of technical instruments.

This chapter will not attempt to give a detailed description of these various elements, but rather to identify the most important short-term activities.

IMPLEMENTING THE NEW FOREST SYSTEM

A change as significant as that being put forward under the forest policy involves a full range of technical and legal actions.

The first stage is the abolition of all forms of assured supply awarded in the public forests; the process will be completed with the signature of forest management contracts under which the user assumes a significant measure of responsibility. Between now and September 1986, by which time all forest management contracts must be signed, various stages are envisaged:

- determination of actual needs for each mill;
- identification of territory for future allowances;
- definition of production objectives for each territory;
- approval of the guidelines for forest activities by the Comité Ministériel Permanent de l'Aménagement et du Développement Régional C.O.M.P.A.D.R.;
- refinement of the basic inventory;
- implementation of the new fee structure;
- all the stages in the production of saplings.

However, the most important element remains the design and preparation of the management manual.

The Management Manual

The Ministry intends to associate itself with the users to implement its action program for bringing forest territory into production. Although the forest management contract to be signed by the Ministry and the user involved defines the respective responsibilities of the two parties, it cannot contain a detailed description of all the measures which must be completed under this arrangement. As a supplement to the forest management contract, the **management manual** will provide detailed information on how the contract is to be executed as well as on the business relations between the parties. Its contents will be prepared by the Ministry in cooperation with the forest industry and the major participants.

The document, to be published as a catalogue, will contain three sections dealing with the technical, regulatory and normative aspects of the forest management contract.

The Technical Section

This section will describe the methods and procedures for, among other things:

- calculating the potential for each territory, including assumptions as to terms and conditions for harvesting and management;
- the expected yield from the different activities to be undertaken;
- a practical guide for silvicultural activities;
- the technical aspects of verifying that development objectives have been attained (follow-up on activities).

The Regulatory Section

The regulatory section will include all the regulations imposed by the Ministry concerning the activities of forest companies. The major elements of this section will be as follows:

- the regulatory aspects of verifying that development objectives have been attained;
- the penalties which may be imposed should there be non-compliance with one of the contract's clauses;
- the practical guide for forest activities.

The Normative Section

Every user who has signed a forest management contract will be required to prepare and obtain the Ministry's approval for a management plan covering the duration of his contract.

The normative section of the management manual will deal with the form and minimum content of this plan, which must include at least the following elements:

- a biophysical description of the territory;
- the development objectives;
- the wood fibre supply requirements;
- methods for protecting the production function of the wildlife and recreation natural sites;
- the five-year plan for forest development and protection of other resources including, among other items, reforestation and silvicultural activities, and the management activities planned for the wildlife and recreation areas;
- the operation plan for the first five-year period;
- the annual forest activity programs

The Use of Pesticides in the Forest

The temporary exceptional measures which, given the stake, enabled the Ministry to use pesticides for protective purposes, cannot be considered an optimal management approach. If the M.E.R. and the participants in the forest sector are to act in keeping with overall long-term interests, a clear and established framework is needed. There is thus good reason to formulate clear rules governing the use of pesticides in the forest.

In this context, Québec must act upon the order-in-council which authorized the Ministry to use insecticides against the spruce budworm by adopting a true policy covering the use of pesticides in the forest. The ministries involved (environment, energy and resources) have thus been mandated to develop such a policy, which must include the following elements:

- the types of approved products which are acceptable, with their restrictions and various possible formulations depending on potential uses;
- the terms and conditions for using various products (spraying techniques, monitoring, etc.);
- the environmental follow-up required in each case;
- procedures for informing users and the public in general.

Assistance for the Private Forest

The administrative implications of the action program for the private forest will be felt mainly at two levels. The first relates to the Ministry's internal administration and will be reflected in the development of an administrative unit responsible for assistance to private forests. The Ministry will administer the subsidy program, which will be regionalized with respect to awarding the status of forest producer and the approval of applications, and to payment and control of forest activities. However, as the Ministry intends to delegate to the syndicates and wood marketing boards the responsibility of providing technical advisory services, service contracts which stipulate the terms and conditions of the execution of the new mandate will be signed with each syndicate and board.

The second level of administrative implication deals with the coordination of the process to bring private lands into production. Since these lands are divided mainly between agriculture and forest, frequently arise when one of these potential uses must take precedence over the other.

This is a problem not only within the agricultural zone, but also on land which has not been zoned. An agreement was reached some years ago between the ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec and the ministère de l'Énergie et des Ressources concerning reforestation of abandoned farmland. Under the agreement, every application for reforestation submitted by a private owner must be approved by an agronomist from the M.A.P.A.Q. Although the mechanics of the agreement have been satisfactory, results indicate that it is sometimes difficult for a property owner to obtain government nursery saplings for reforestation. A joint analysis of the agreement concerning the utilization of land no longer used for agriculture is therefore needed.

The following principles will be applied with respect to the reforestation of agricultural land which is lying fallow:

- cleared agricultural land located in a provisional or permanent agricultural zone may not be reforested without the authorization of a M.A.P.A.Q. representative;

- any agricultural land located outside a provisional or permanent zone may be reforested without seeking the authorization of a M.A.P.A.Q. representative;

- agricultural land located within a provisional or permanent agricultural zone may be reforested with the authorization of a M.A.P.A.Q. representative, provided the application satisfies the reforestation assessment grid formulated by the Commission de protection du territoire agricole;

- agricultural land located in a provisional or permanent agricultural zone may be reforested, with the authorization of a M.A.P.A.Q. representative, if it is to be used as a windbreak, to prevent erosion by water or wind, or to replenish an existing plantation;

- agricultural land located in a provisional or permanent agricultural zone may be reforested with the authorization of a M.A.P.A.Q. representative, if it is intended that Christmas trees be planted there because the land's potential or location makes it less well suited for agriculture in the long run.

The fact that forest products are considered as agricultural products has prompted the M.A.P.A.Q. to implement assistance programs which are in some cases similar, and in other cases complementary to those available through the M.E.R. For example, the M.A.P.A.Q. has developed solid expertise and assistance programs for the treatment of stands designated for maple sap production; these same stands are also eligible for a M.E.R. subsidy program. It is therefore to be hoped that the various programs designed for private forests will be coordinated, from the standpoint of both the client and the government.

The objective must be to develop an economy based on agriculture and forestry in which the two forms of production complement each other, and the two ministries will formulate their programs with this in mind.

The Conseil Permanent de la Forêt

Although the most significant problems standing in the way of the future development of the forest industry are related to supply, a temporary surplus of raw material currently exists on the market. This is due to the need to recover dead wood following insect epidemics in public and private forests. The market for chips is also saturated due to high output levels in the sawmill industry over the last two years. Of course, this situation is reflected in prices which, in general, are relatively low. Small-scale wood producers and sawmill companies, which derive a substantial portion of their revenue from the sale of chips, cannot afford to see this situation continue until the policy has been implemented. Immediate action is therefore required.

Up till now, the government has held to the principle of not intervening directly in the trade and price determination of raw materials, believing that these lie within the province of free enterprise. The government will continue to abide by this principle and will encourage the development of a mechanism allowing joint action among the various participants, to improve trade and up the price paid for raw materials. The government is thus betting that participants will reach an agreement more easily if they negotiate with a view to solving a collective problem.

For this purpose, the Ministry will set up a **Conseil Permanent de la Forêt** which will include representatives from the sawmill, pulp and paper companies, and private producers. The major mandate of this body, which may include variations in each region, will be to ensure continuous joint action among the various users and producers so that problems related to marketing are minimized. It will also be charged with advising the Minister on matters related to marketing wood from private forests (roundwood and chips) and wood from public forests (chips and trade in quality hardwood) and, at the request of the Minister, on any other matter related to the management of forest resources.

This advisory body must see to the disposal of available wood until the new forestry system is in place, and is called upon to set up a permanent joint action structure.

The Role of Government Corporations

Government corporations are tools which can be used to implement sectoral policies.

The role of government corporations in forestry, as in other sectors, is the subject of continuing study. In particular, the possible future role of the Rexfor corporation will be finalized once current consultations are completed. However, Rexfor must play a role complementary to that of private enterprise and must focus its efforts more intensely on the development of new technology rather than on supporting traditional sectors.

10

HUMAN RESOURCES

Everyone involved in the forest sector, from the mill manager to the tree planter, and from the forestry engineer to the forest worker, must be aware of how important his role is in the implementation of the new forest policy.

The greatest challenge facing Québec as it strives to build a forest for the future is perhaps that of developing sufficient qualified manpower.

CONSOLIDATION OF EMPLOYMENT

The forest has always been a significant source of employment in both the harvesting and processing phases. In Québec, more than 250 000 jobs depend either directly or indirectly on the industrial use of wood fibre.

By stabilizing supply, the forest policy will contribute to the consolidation of these jobs and the attendant economic activity. One of the aims of the forest system is to reestablish a more normal economic cycle and restore the "economy" of the resource. The proposed model will reestablish the balance between the various sources of supply and restore the true value of wood fibre. This new balance will have a significant stabilizing effect while contributing to the solution of the problems currently encountered in marketing chips and wood from private forests.

A return to a healthier forest economy and employment consolidation will be the short and medium-term effects of this. In the longer term, a new forest will allow Québec to build a reserve of wood which is essential not only for developing the sector, but also for attracting the investments that will generate new employment which would be jeapordized under the existing management structure.

Furthermore, building a new forest encourages the development of new activities related to management and bringing land into production. Taking reforestation as an example, the work that is required will generate more than 10 000 permanent forest jobs (person/years). A new class of forest worker will thus emerge, whose efforts will be geared much more to forest management than to simple harvesting.

Québec does not have the extensive experience in forest management that other countries with a long tradition in this area can boast of. It will thus be necessary to train a manpower able to implement the various elements of the forest policy.

Generally speaking, with the exception of certain controlled-harvesting experiments designed to preserve existing regeneration, conventional planting and certain types of regeneration cutting, foresters in Québec have little experience in forest management. Thus, in cooperation with educational institutions involved in the field, the Ministry intends to participate in developing training programs adapted to the new needs. Among other initiatives, the Ministry, in cooperation with industry, will help identify specific training needs and will make available the resource persons and expertise needed to establish these programs.

The new forest policy also involves major modifications in how foresters and the general public view the role of the forest. In this regard, the Ministry sees popularization as an essential tool, of which it intends to make full use. Two types of actions are planned with respect to this aspect of training:

- enhancing the role of forest education centres (C.E.F.) near the major urban centres as well as in forest areas. It is possible to reach a vast public through these centres, thus not only ensuring training and the acquisition of knowledge, but also contributing to the creation of a "forest awareness" among Quebecers with respect to both public and private forests;

- increased emphasis on the "popularization" aspect. With the cooperation of various other participants (companies, ministère de l'Environnement, etc.), the Ministry will distribute as much information as possible through the use of teaching material, so as to illustrate the various facets of forest development.

THE IMPACT ON LABOUR RELATIONS

These changes to the forest system, especially those dealing with returning land to production, will have consequences on how work in the forest is organized.

Adopting harvesting procedures to ensure regeneration may bring about a significant change in the methods of operation in the forest and in the type of machinery used. Similarly, the definition of an allowance territory and, even more so, the abolition of forest concession limits will lead to changes in union certification.

All these considerations, as well as training needs and the necessity of improving the quality of life and safety of forest workers, call for specific action to minimize their negative impact on the forest worker.

Accordingly, an interdepartmental team (the **Groupe interministériel d'étude sur le travail en forêt**) will be given a mandate to study the impact of the forest policy on industrial relations in the forest industry, and to suggest appropriate measures.

Conclusion

CONCLUSION

The new forest policy emerged from the Ministry's observations and opinions expressed by many interested parties, all of which clearly indicated that Québec needed to rethink its orientations with respect to the management and utilization of its forest resources. The era of abundance is past, and the forest is now a limited resource whose utilization must be maximized. In addition, the very heavy demands made on the forest require increasingly stringent standards to protect the potential production of all forest resources, including wood fibre. The Ministry's mandate is to manage state-owned forest land, protect all the production functions of the forest and encourage the development of the forest sector for the benefit of Québec society as a whole. It must therefore mold its actions to the new aspirations of Quebecers and to changing world conditions.

The sombre picture painted by the status report published in June 1984 demanded a far-reaching review of the forest policy. Drastic measures were required to correct the situation and ensure a brighter future for the forest sector. The Ministry decided to make significant changes in the areas within its jurisdiction, namely, in the public territory land-use plan the terms and conditions governing forest activities, the process of bringing both public and private forests into production, the way in which wood quotas are granted in the public forest, fee structures, industrial development strategy, and research and development.

The new public territory land-use plan and the attendant forest management guidelines will allow adequate satisfaction of Quebec's need for forest areas geared to various purposes. It will also protect all the forest's resources, and will ensure that sufficient wood fibre is produced to meet the needs of today's industry and provide for its future development.

Forest resources must be managed on a sustained yield basis to ensure the long-term continuation of the resource and of the economic activity it supports. Moreover, this requirement was clearly expressed by the majority of participants, whether they were interested in the conservation of the forest or hoping for a steady, reliable supply of wood fibre for their mills. However, basing the public forest management policy on sustained yield involves reviewing all the existing quotas and implementing a management program able to maintain a level of production which will satisfy existing and future industrial requirements. The definition of a territory, which is determined for each quota, stems from the adoption of this principle and the need to create a sense of responsibility among companies with respect to bringing their territory into production.

The need to review the fee structure for public forests is long-standing. A wood quota is a privilege granted to a user. Since demand is equal to almost all the available resource, the laws of economics should be applied to enhance the quota system. At the same time, however, the Ministry must see that Québec industry remains competitive on world markets and, in this respect, the fee structure is an indispensable management tool.

This policy statement reserves a major role for private forests. Over the coming decades, they will prove to be vital supply sources for sustaining the development of the forest sector. Beginning immediately, the Ministry will thus devote considerable efforts to providing private producers with the tools they need to undertake major forest management activities. Granting active forest producer status, will not only identify those producers who truly wish to produce wood fibre but, more importantly, will make it possible to mount effective assistance programs. But producers will also have to do their share and become actively involved in developing their territory.

Finally, the greatest share of revenues Québec earns from its vast forests is derived from the industrial processing of wood fibre. The industrial structure, which springs from private initiatives, must be continually adapted if it is to remain competitive and meet the changing world economic situation. The government must encourage initiatives which will bring about those changes in the industrial structure which it considers of greatest benefit to Quebecers. Québec's strategy must thus be to capitalize on its strengths and closely monitor its production costs, the essential element in its competitive position.

From the earliest times, the forest has been a renewable resource which has played an important role in Québec's economic and social life. It provided the basis of industrialization and has made a major contribution to placing Québec among the wealthy nations of the world. Québec must use its forestry expertise not only to pursue forest development, but also to meet the challenges of economic development and the need to attain harmonious utilization of its forest resources.

GLOSSARY

N.B. Terms defined in this glossary are those used in the Forest Policy.

ADDED VALUE

Difference between the cost of materials and supplies (electricity, chemicals, petroleum products, etc,) used by businesses, and the value of their shipments. The added value represents the sum of money available to pay salaries, wages, interest, profits, taxes and depreciation. In other words, it is the payment of production costs before taxes (manpower, capital and entrepreneurship). Indirect taxes, mainly sales tax, are nevertheless included.

BACKLOG

An area where regeneration is not taking place or where post-cut regeneration has proven inadequate.

BASIC MANAGEMENT

A systematic attempt to bring cut-over land back to a level of production at least equivalent to the pre-harvesting level, by using cutting methods adapted to each site. When the adaptation of cutting methods is not enough to ensure satisfactory natural regeneration, reforestation procedures are used.

BIOLOGICAL CONTROL

More or less permanent way of reducing the damage caused to forests (or other plant formations) by harmful animals, plants or viruses, through the logical use of their natural biotic enemies.

BIOMASS

In forestry, the term "biomass" signifies the entire tree, from roots to leaves, including stump, trunk and branches.

CAPACITY

Volume of wood fibre that can be harvested annually or periodically, from a given expanse of forest and over a certain period of time, in accordance with management objectives.

CHEMICAL CONTROL

Way of at least temporarily protecting forests (or other plant formations) from harmful animals, plants or viruses, through the use of chemicals.

COMMERCIAL FOREST

Forest containing timber or industrial wood currently or potentially accessible and marketable. Administratively speaking, the commercial forest is territory delimited by the Ministry for management purposes and is subdivided into four socioeconomic zones and nine administrative regions (See diagram, page 15).

COMMERCIAL PULP

Pulp bought on the open market, as opposed to pulp which is used by the company which produced it. (The term "market pulp" is also used.)

DETERIORATED FOREST

Forest in an unsatisfactory condition, composed mainly of poorly formed trees or of species which are undesirable because of age or the results of insect epidemics, disease or inadequate silvicultural practices.

DOMANIAL FOREST

In a general sense, all Crown forests. However, in the Forest Policy, domanial forests (as defined by the Lands and Forests Act) are State-owned forest conservation areas, distinguished from forest concessions.

ECOLOGICAL ZONE

The land mass (91 percent of Québec's area) is divided into three main ecological areas:

- the northern region, or TUNDRA, is void of trees and consists of swamps and rocky outcrops where moss, lichens and shrubs grow. It covers 208 741 km^2, or 12 percent of Québec's area;

- the middle zone, called TAIGA, extends to about the 52nd parallel and is sparsely wooded. It has an area of 527 236 km^2, or 32 percent of Québec's area;

- the most southerly zone, the FOREST, includes all the forests and covers the rest of Québec, which is to say, 779 256 km^2 or 47 percent of its area.

ECOSYSTEM

Community of living things and interrelated non-living things which occupy a given area.

ENVIRONMENT

The set of physical characteristics which influence the development and survival of an organism or one of its parts (moisture, soil fertility, topography, altitude, etc.).

FEE

See "Royalty".

"FIBRE CONNECTION"

The management-harvesting-processing sequence based on the utilization of wood in the form of wood fibre from which the fibre has been partially or totally removed for the production of pulp (paper), for example, or particle board, chipboard, etc.

FOREST CONCESSION

Québec public forest land on which an individual, company or corporation has the right to cut all the wood, in return for fulfilment of certain obligations and payment of royalties, in accordance with a rental or leasing contract signed with the government.

FOREST MANAGEMENT

The application of forestry and silvicultural principles, so as to ensure lasting, maximum production in a given forest area.

FOREST MANAGEMENT CONTRACT

An agreement between the ministère de l'Énergie et des Ressources and a user, which guarantees the latter a long-term supply of wood fibre from the public forest. The contract guarantees a certain volume of wood fibre from a delimited, though non-exclusive, area and requires that the user reach stated production objectives.

FREEHOLD

Land which is owned outright and is free from any obligation or royalty.

HARDWOOD

Angiosperm whose leaves are quite broad: birch, poplar, maple, beech, ash, oak, etc.

INSECTICIDE

Chemical or biological preparation used to control insects. In forestry, insecticides are usually sprayed from the air.

Biological insecticides

The bacillus thuringiensis (b.t.) is the only bacteria used as a biological insecticide in North America. Used primarily in agriculture and to a lesser degree in forestry, it affects insects once it has been ingested.

Chemical insecticides

Fenitrothion and aminocarb are the most popular chemical insecticides used to control the spruce budworm in Canada. They affect insects mainly through contact.

INTENSIVE MANAGEMENT

Type of forestry in which the best silvicultural and management techniques are practised to attain maximum production per surface unit, in terms of both quantity and quality.

INTENSIVE SILVICULTURE

Intensive silviculture is carried out through the use of artificial regeneration and state-of-the-art forestry techniques, such as the use of improved seedlings, maximum site preparation, short turnovers, fertilizers, etc.

JOINT PLAN

Producers' plan, established for marketing agricultural products and approved by the Régie des marchés agricoles du Québec, including related regulations.

LAND USE PLAN

This is a planning tool which establishes guidelines for the physical organization of territories under the regional county municipalities (RCMs) by coordinating the choices and decisions which concern all the municipalities involved and the government. The Act respecting land use planning and development defines the general framework for the land use plans, entrusting the RCMs with drawing them up.

MANAGEMENT PLAN

Coordination of the various sectors of forest activity, so as to ensure the complete and logical utilization of wood fibre and other forest resources. The management plan is drawn up following an inventory.

MATURE STAND

See "Mature Stock".

MATURE STOCK

Volume of wood taken form a stand whose growth rate is either stable or decreasing.

MERCHANTABLE VOLUME

Volume of wood in the stem and branches, between the stump (15 cm from the ground) and the small end (9 cm harvestable diameter, outside bark). Potential rot is included in the gross merchantable volume and excluded from the net.

PESTICIDE

Chemical or biological preparation used to control harmful organisms, plants or animals.

PHYTOCIDE

Chemical preparation used to suppress or inhibit the growth of certain plants and their seeds or spores. Arboricides or silvicides are used for trees, while herbicides are used against herbaceous growth and fungicides against fungi.

PRIVATE FOREST

Woodlands belonging to individuals or companies. Private forests can be large or small; the latter are subdivided into woodlots located on farms and those located elsewhere. Large private forests are those which cover 2 000+ acres and belong to one owner.

QUALITY SPECIES

The Ministry defines yellow birch, oak, elm, walnut, and white and red pine as "quality species".

QUOTA

Volume of wood harvested in public forests which, following a process of evaluation and negotiation, may be allotted to each processing plant, in accordance with an agreement or letter signed by the Minister.

ROYALTY

Fee paid to the State by each forest user for wood he cuts or has cut on public forest land, in accordance with a cutting license issued by the Ministry.

SECONDARY SPECIES AVAILABILITY

Quantity of wood fibre provided by secondary species, this quantity, which becomes available when the main species of a stand are harvested may fluctuate from one year to the next.

SHORTAGE

Situation which occurs when a given forest area can no longer meet a specific demand for wood fibre (See "Capacity").

SHORT TURNOVER

Management technique which produces the maximum volume of wood fibre in the shortest possible time between harvests.

SOCIOECONOMIC ZONES

As well as dividing the forest region into nine administrative regions, the Ministry has also divided it into four zones according to socioeconomic characteristics:

Commuter Operations Zone:

A territory lying approximately 65 km from municipalities of 5 000 inhabitants or more, this is the preferred source of supply for the forest industry.

Pulpwood and Sawlogs Operations Zone

A territory located more than 65 km from any municipality, whose accessible timber may be of interest to sawmills and pulp and paper industries as a secondary source of supply.

Pulpwood Operations Zone

That part of the commercial forest region which may be of interest to the industry as a tertiary source of supply.

Non-economic Zone

The northern part of the territory which cannot be logged economically for the moment but may have some potential in the future.

SOFTWOOD

Tree of the gymnosperm category, producing fruit in cones (hence the name "coniferous") and usually having leaves in the form of needles or scales: balsam fir, spruce, pine, cedar, hemlock spruce, larch, etc.

STAND

Group of trees in which the vegetation, its structure, age and spacing, etc. are uniform (e.g., maple grove or mature fir plantation).

SUPPLY CONTRACT

Agreement between the government and the current or future owner of a wood processing plant, in accordance with Section 106 of the Lands and Forests Act. This contract stipulates the annual volume of wood from public forests which is allotted to the plant. It also indicates where the wood will come from and specifies the length of the contract, as well as the conditions governing its execution and renewal.

SUPPLY GUARANTEE

Guarantee, issued by the Minister in accordance with Section 93 of the Lands and Forests Act, stating that plants owned by holders of now rescinded timber limits will be supplied with wood from public forests.

SUSTAINED YIELD

Production by a forest of the same annual volume of wood for an unlimited period of time.

TIME SEQUENCE OF PLANTS

The various groups of vegetation which succeed one another on a given site.

USER

Anyone having an industrial license. In the new forest policy, anyone having a public forest management contract.

CEF

Centre éducatif forestier

CERFO

Centre d'enseignement et de recherche en foresterie de Sainte-Foy

COMPADR

Comité ministériel permanent de l'aménagement et du développement régional

GTPH

Groupe de travail pour la protection des habitats

IST

Information scientifique et technique

MAPAQ

Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec

MENVIQ

Ministère de l'Environnement du Québec

MLCP

Ministère du Loisir, de la Chasse et de la Pêche du Québec

MRC

Municipalité régionale de comté

OGC

Organisme de gestion en commun

OPDQ

Office de Planification et de Développement du Québec

PECEC

Programme expérimental de création d'emplois communautaires

REXFOR

Société de récupération et d'exploitation forestière

SDI

Société de développement industriel